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COAL-MINE FATALITIES IN THE UNITED STATES

1921

BY

WILLIAM W. ADAMS

WASHINGTON
GOVERNMENT PRINTING OFFICE
1922

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COAL-MINE FATALITIES IN THE UNITED STATES, 1921.

By WILLIAM W. ADAMS.

INTRODUCTION.

Fatal accidents at coal mines during the calendar year 1921 resulted in a smaller loss of life than for any year since 1903. Reports furnished by State mine inspectors to the United States Bureau of Mines show that 1,973 men were killed by accidents in and about the mines, a reduction of 298 fatalities, or more than 13 per cent, compared to 1920. All causes of accidents aboveground and in shafts, as well as the number of accidents resulting from falls of roof and coal, haulage, and explosions of gas and dust showed reduction; there were slight increases in fatal accidents underground caused by explosives, electricity, and mine fires.

Gratifying as this reduction in fatalities naturally is, it nevertheless does not represent a decrease in fatality rates. The generally depressed condition of industry throughout the year so affected the demand for coal that the production for the year fell off 23½ per cent as compared with that for 1920. Thus the percentage of loss in production was nearly twice as large as the percentage of reduction in the number of fatal accidents. The most recent estimates of the United States Geological Survey place the output of coal in 1921 at 494,500,000 short tons—407,000,000 tons bituminous and 87,500,000 tons anthracite—and that for 1920 at 645,663,000 tons, of which 556,563,000 tons was bituminous and 89,100,000 tons was anthracite. The fatality rate based upon output of coal was therefore 3.99 per million tons in 1921 as against 3.52 the year before. Unsafe conditions underground at bituminous mines caused by mines standing idle much of the year doubtless helped to increase the fatality rate.

A further comparison between the two years may be made on the basis of the number of men working at the mines. Final figures showing the number of employees are unfortunately not yet available, but the number of man-days of labor performed may be estimated from published figures of production of coal and from the known daily output per man during 1918 and 1919. In this way it may readily be found that the output of coal during the past two years indicates that approximately 144,000,000 shifts were worked by all employees in 1921 and 188,000,000 shifts in 1920. On this basis

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the fatality rate per thousand full-time or 300-day workers was 4.11 in 1921 as against 3.62 in 1920.

The quantity of coal produced in 1921 represents approximately 251,000 tons for each life lost. Although this figure does not compare favorably with that for the preceding year, it has been surpassed in only three years—1916, 1918, and 1920.

Preliminary estimates from State inspectors indicate that the number of employees in 1921 will show a loss of fully 30,000 men, distributed generally through all the important coal fields. According to these estimates approximately 750,000 men were engaged in coal mining in 1921 as against an estimate of 780,000 employed in 1920.

A gratifying feature of the year's operations was the small number of major disasters and of deaths resulting therefrom. There were but five accidents resulting in five or more deaths each, and the total number of deaths from such accidents was only 34, this number being smaller than for any preceding year since annual statistics of coal-mine fatalities have been published by the Federal Government (first year, 1911) and also constituting only 1.7 per cent of the 1,973 fatalities from all causes combined, a percentage also lower than for any previous year during the same period. No better indication than this could be had of the marked improvement that has followed the combined efforts of the Federal and State mining bureaus and of operators and miners' associations to reduce the number and severity of mine explosions and fires that took such heavy toll of life and property before nation-wide safety work was started.

Table 1 summarizes the chief data concerning coal-mine fatalities since 1907.

TABLE 1.—*Fatality rates for the years 1907 to 1921.*

Year.	Men employed.		Average days active.	Total shifts.	Men killed.	Killed per 1,000 300-day workers.	Production per death (short tons).	Average production per man.	
	Actual number.	Equivalent in 300-day workers.						Tons per year.	Tons per day.
1907	680,492	523,979	231	157,193,652	3,242	6.19	147,407	708	3.06
1908	690,438	448,785	195	134,635,410	2,445	5.45	167,407	603	3.09
1909	666,552	.....	.....	.....	2,642	.....	174,416	691	.....
1910	725,030	531,689	220	159,506,600	2,821	5.31	177,808	692	3.15
1911	728,348	534,122	220	160,236,560	2,656	4.97	186,887	682	3.10
1912	722,662	541,997	225	162,598,950	2,419	4.46	220,945	740	3.29
1913	747,644	593,131	238	177,939,272	2,785	4.70	204,685	762	3.20
1914	763,185	526,598	207	157,979,295	2,454	4.66	209,261	673	3.25
1915	734,008	511,598	209	153,479,495	2,269	4.44	234,297	724	3.46
1916	720,971	565,766	235	169,729,816	2,226	3.93	265,094	818	3.48
1917	757,317	634,666	251	190,399,680	2,696	4.25	241,618	860	3.43
1918	762,426	654,973	258	196,491,984	2,580	3.94	262,873	890	3.45
1919	776,569	542,217	209	162,665,023	2,317	4.27	239,082	713	3.41
1920 [a]	780,000	626,667	241	188,000,000	2,271	3.62	284,308	827	3.43
1921 [a]	.....	.....	.....	.....	1,973	.....	251,124	.....	.....

[a] Data for 1920 and 1921, except for fatalities, are subject to revision.

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TABLE 2.—*United States: Fatalities at coal mines for the years ended Dec. 31, 1920 and 1921.*

Cause.	Number killed.		Increase or decrease.	Percentage of increase or decrease.
	1920	1921		
Underground:				
Falls of roof or face	1,132	1,019	−113	− 9.98
Mine cars and locomotives	408	338	− 70	−17.16
Gas and dust explosions	164	115	− 49	−29.88
Explosives	128	152	+ 24	+18.75
Electricity	76	80	+ 4	+ 5.26
Mine fires	8	9	+ 1	+12.50
Miscellaneous underground	104	107	+ 3	+ 2.88
Total underground	2,020	1,820	−200	− 9.90
Shaft: Total shaft	56	36	− 20	−35.71
Surface:				
Haulage	78	44	− 34	− 4.36
Machinery	29	17	− 12	−41.38
Miscellaneous	88	56	− 32	−36.36
Total surface	195	117	− 78	−40.00
Grand total	2,271	1,973	−298	−13.12

ACKNOWLEDGMENTS.

Without the hearty cooperation of every State coal-mine inspector, it would not be possible for the Bureau of Mines to issue a prompt and complete summary of coal-mine fatalities for each month as the year progressed nor an annual compilation so soon after the close of the year. The bureau therefore gratefully acknowledges the assistance it has received from the mine officials of all coal-producing States. For assistance in the compilation of the tables herein presented the writer is indebted to Miss Lillian Chenoweth of the Bureau of Mines. Acknowledgment is also due to the United States Geological Survey, whose statistics of production and employees at coal mines have been used in the preparation of this report.

CAUSES OF FATALITIES IN 1921, BY STATES AND MONTHS.

The causes of fatal accidents at coal mines in 1921, by States and months, are shown in Tables 3 to 16, inclusive.

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TABLE 3.—*United States: Coal-mine fatalities during the year ended Dec. 31, 1921, by causes and States.*

State.	Underground.													Shaft.					Surface.							Total by States.	
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	39	.....	12	6	.....	8	1	12	.....	.....	.....	.....	78	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	2	80	76
Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Arkansas	7	.....	.....	6	.....	2	.....	1	.....	.....	.....	.....	16	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	17	9
California, Idaho, and Nevada	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Colorado	21	6	8	.....	5	.....	.....	3	.....	.....	6	.....	49	.....	.....	.....	.....	.....	1	2	.....	.....	.....	.....	3	52	70
Georgia and North Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Illinois	92	.....	48	9	6	11	2	9	.....	.....	.....	4	181	3	1	5	.....	9	.....	.....	.....	.....	3	.....	3	193	207
Indiana	24	.....	6	4	.....	15	1	2	1	.....	.....	4	57	4	.....	3	.....	7	.....	.....	.....	.....	.....	.....	.....	64	88
Iowa	16	1	1	.....	.....	.....	.....	1	.....	1	.....	.....	20	.....	2	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	22	25
Kansas	7	.....	1	.....	4	.....	.....	1	.....	.....	.....	.....	13	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	14	26
Kentucky	59	4	24	1	2	11	2	10	1	1	.....	2	117	.....	.....	.....	.....	.....	3	1	.....	.....	2	1	7	124	123
Maryland	6	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	7
Michigan	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	3	6
Missouri	10	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	11
Montana	7	1	1	.....	.....	1	.....	2	.....	.....	.....	.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	13	14
New Mexico	8	.....	3	.....	.....	.....	.....	1	1	.....	.....	.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13	33
North Dakota	1	.....	1	1	.....	1	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	3
Ohio	74	.....	20	.....	.....	3	.....	2	.....	1	.....	1	101	.....	.....	.....	.....	.....	1	1	.....	.....	2	3	7	108	136
Oklahoma	9	1	4	1	.....	.....	.....	1	.....	1	1	.....	18	1	.....	.....	.....	1	.....	.....	.....	.....	.....	1	1	20	41
Oregon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Pennsylvania (bituminous)	118	38	50	2	.....	15	.....	12	.....	8	2	13	258	.....	.....	.....	.....	.....	2	3	2	1	4	10	22	280	427
South Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Tennessee	4	2	3	.....	.....	1	.....	1	.....	.....	.....	1	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	21
Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	1	1	2	5
Utah	4	1	5	.....	.....	.....	.....	1	.....	2	.....	.....	13	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	2	15	35
Virginia	13	.....	1	.....	.....	.....	.....	3	.....	.....	.....	.....	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17	26
Washington	2	1	2	.....	.....	.....	.....	.....	.....	.....	.....	1	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	7	18
West Virginia	176	5	71	4	.....	14	.....	12	.....	3	.....	4	289	1	2	.....	.....	3	9	4	1	.....	2	12	28	320	324
Wyoming	18	1	5	.....	.....	1	.....	2	1	.....	.....	.....	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	29	49
Total (bituminous)	716	62	268	34	17	84	6	76	4	17	9	30	1,323	11	6	8	.....	25	16	13	4	1	16	30	80	1,428	1,780
Pennsylvania (anthracite)	203	38	70	62	2	68	3	4	3	1	.....	43	497	7	3	1	.....	11	8	4	12	.....	4	9	37	545	491
Total, 1921	919	100	338	96	19	152	9	80	7	18	9	73	1,820	18	9	9	.....	36	24	17	16	1	20	39	117	1,973	.....
Total, 1920	1,004	128	408	130	34	128	18	76	4	37	8	45	2,020	27	8	19	2	56	54	17	25	4	24	71	195	.....	2,271

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TABLE 4.—*United States: Coal-mine fatalities during the years ended Dec. 31, 1920 and 1921, by causes and months.*

Month.	Underground.													Shaft.					Surface.							Grand total.
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	
1920.																										
January	74	17	35	12	5	16	....	11	....	8	1	4	183	3	1	5	....	9	5	1	3	.....	3	4	16	208
February	68	8	28	6	4	11	2	4	....	3	....	1	135	7	.....	1	....	8	6	2	2	.....	1	6	17	160
March	80	8	33	7	1	8	1	5	2	3	....	9	157	1	.....	1	....	2	9	1	2	.....	3	7	22	181
April	75	5	37	7	5	13	1	3	....	....	....	2	148	....	.....	2	....	2	5	1	2	.....	1	3	12	162
May	60	11	36	10	2	7	2	5	....	3	....	2	138	4	.....	4	....	8	5	2	4	.....	2	4	17	163
June	106	15	22	28	3	10	3	8	....	5	....	2	202	4	1	....	....	5	3	1	1	1	1	5	12	219
July	89	12	31	12	.....	10	....	7	....	3	....	7	171	....	.....	2	....	2	2	3	1	1	2	12	21	194
August	88	11	38	14	.....	5	1	10	2	....	....	4	173	....	6	1	1	8	5	3	1	1	6	6	22	203
September	98	8	35	10	.....	17	1	10	....	3	....	2	184	1	.....	....	....	1	3	1	1	.....	....	8	13	198
October	90	15	41	6	4	8	4	6	....	2	....	3	179	2	.....	1	....	3	4	2	2	.....	1	3	12	194
November	85	10	34	14	2	11	3	5	....	4	7	4	179	2	.....	2	1	5	3	....	2	1	3	5	14	198
December	91	8	38	4	8	12	....	2	....	3	....	5	171	3	.....	....	....	3	4	....	4	.....	1	8	17	191
Total, 1920	**1,004**	**128**	**408**	**130**	**34**	**128**	**18**	**76**	**4**	**37**	**8**	**45**	**2,020**	**27**	**8**	**19**	**2**	**56**	**54**	**17**	**25**	**4**	**24**	**71**	**195**	**2,271**
1921.																										
January	101	8	40	4	.....	9	1	5	....	3	....	7	178	1	1	....	....	2	7	....	1	.....	4	5	17	197
February	68	8	30	8	7	8	....	5	1	3	....	8	146	....	1	....	....	1	4	....	1	.....	3	5	13	160
March	56	6	25	8	.....	12	2	7	2	1	....	3	122	2	.....	1	....	3	2	1	3	.....	1	5	12	137
April	79	10	29	10	2	16	....	3	1	.....	.....	7	157	1	1	.....	....	2	....	1	.....	.....	1	3	5	164
May	76	15	33	4	2	11	1	6	....	3	....	12	163	2	.....	.....	....	2	3	2	.....	.....	1	2	8	173
June	78	10	25	5	.....	13	....	15	....	1	....	7	154	2	2	3	....	7	3	2	1	.....	.....	3	9	170
July	68	6	30	11	.....	12	2	10	1	2	....	4	146	5	.....	.....	....	5	1	5	1	1	....	3	11	162
August	68	11	24	3	1	27	1	5	....	1	2	3	146	....	1	.....	....	1	1	3	.....	.....	2	2	8	155
September	79	11	24	8	.....	16	....	5	....	1	....	10	154	2	.....	.....	....	2	1	1	3	.....	4	2	11	167
October	97	4	34	3	4	10	1	10	....	1	1	5	170	....	1	1	....	2	1	1	1	.....	2	3	8	180
November	75	5	27	10	.....	15	....	6	....	2	....	4	144	1	.....	4	....	5	1	1	5	.....	.....	2	9	158
December	74	6	17	22	3	3	1	3	2	....	6	3	140	2	2	....	....	4	....	....	....	.....	2	4	6	150
Total, 1921	**919**	**100**	**338**	**96**	**19**	**152**	**9**	**80**	**7**	**18**	**9**	**73**	**1,820**	**18**	**9**	**9**	....	**36**	**24**	**17**	**16**	**1**	**20**	**39**	**117**	**1,973**

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TABLE 5.—*United States: Coal-mine fatalities during* **January,** *1921, by causes and States.*

State.	Underground.													Shaft.					Surface.							Total by States.	
	Falls of roof (coal, rock, etc.).	Fall of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	3	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	2
Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Arkansas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	2
California, Idaho, and Nevada	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Colorado	2	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	10
Georgia and North Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Illinois	9	.....	2	1	.....	.....	.....	1	.....	.....	.....	.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2	15	15
Indiana	5	.....	2	.....	.....	2	.....	.....	.....	.....	.....	1	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	9
Iowa	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	2
Kansas	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	5
Kentucky	11	.....	3	.....	.....	1	.....	2	.....	.....	.....	.....	17	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	2	19	11
Maryland	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	0
Michigan	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	3	0
Missouri	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	1
Montana	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1
New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	2
North Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Ohio	5	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	7	5
Oklahoma	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	5
Oregon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Pennsylvania (bituminous)	14	2	10	.....	.....	.....	.....	.....	.....	2	.....	1	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	30	43
South Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Tennessee	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1
Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1	0
Utah	1	.....	2	.....	.....	.....	.....	.....	.....	1	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	3
Virginia	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	6
Washington	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	3
West Virginia	18	2	7	.....	.....	.....	.....	.....	.....	.....	.....	1	28	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	2	30	31
Wyoming	3	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	4
Total (bituminous)	82	5	32	1	.....	4	.....	5	.....	3	.....	4	136	.....	1	.....	.....	1	2	.....	.....	.....	3	4	9	146	161
Pennsylvania (anthracite)	19	3	8	3	.....	5	1	.....	.....	.....	.....	3	42	1	.....	.....	.....	1	5	.....	1	.....	1	1	8	51	47
Total, January, 1921	101	8	40	4	.....	9	1	5	.....	3	.....	7	178	1	1	.....	.....	2	7	.....	1	.....	4	5	17	197	.....
Total, January, 1920	74	17	35	12	5	16	.....	11	.....	8	1	4	183	3	1	5	.....	9	5	1	3	.....	3	4	16	.....	208

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TABLE 6.—*United States: Coal-mine fatalities during* **February,** *1921, by causes and States.*

State.	Underground.													Shaft.					Surface.							Total by States.	
	Falls of roof (coal, rock, etc.).	Falls o face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Min ng machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	3	....	6	....	....	1	....	1	....	....	....	....	11	....	....	....	....	....	....	....	....	....	....	....	....	11	2
Alaska	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Arkansas	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	1
California, Idaho, and Nevada	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Colorado	2	....	....	....	5	....	....	1	....	....	....	....	8	....	....	....	....	....	....	....	....	....	....	....	....	8	6
Georgia and North Carolina	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Illinois	11	....	7	3	....	....	....	....	....	....	....	....	21	....	....	....	....	....	....	....	....	....	....	....	....	21	17
Indiana	1	....	1	4	....	3	....	....	....	....	....	1	10	....	....	....	....	....	....	....	....	....	....	....	....	10	6
Iowa	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	2
Kansas	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Kentucky	5	1	2	....	....	....	....	....	....	....	....	....	8	....	....	....	....	....	....	1	....	....	....	....	....	1	9	7
Maryland	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	1
Michigan	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Missouri	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	0
Montana	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
New Mexico	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	1
North Dakota	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Ohio	6	....	1	....	....	....	....	....	....	1	....	....	8	....	....	....	....	....	....	....	....	....	1	1	2	10	10
Oklahoma	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	1
Oregon	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Pennsylvania (bituminous)	7	2	2	....	....	1	....	1	....	2	....	2	17	....	....	....	....	....	....	....	....	....	1	2	3	20	31
South Dakota	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Tennessee	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Texas	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Utah	....	....	1	....	....	....	....	1	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	2	6
Virginia	3	....	....	....	....	....	....	1	....	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	4	3
Washington	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	1
West Virginia	15	....	3	....	....	....	....	....	....	....	....	3	21	....	....	....	....	....	....	....	....	....	1	1	2	23	20
Wyoming	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	3
Total (bituminous)	58	3	23	7	5	6	....	5	....	3	....	6	116	....	....	....	....	....	1	....	....	....	3	4	8	124	121
Pennsylvania (anthracite)	10	5	7	1	2	2	....	....	1	....	....	2	30	....	1	....	....	....	3	....	1	....	....	1	5	36	39
Total, February, 1921	68	8	30	8	7	8	....	5	1	3	....	8	146	....	1	....	....	....	4	....	1	....	3	5	13	160	.....
Total, February, 1920	68	8	28	6	4	11	2	4	....	3	....	1	135	7	.....	1	....	8	6	2	2	.....	1	6	17	.....	160

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TABLE 7.—*United States: Coal-mine fatalities during* **March,** *1921, by causes and States.*

State.	Underground.												Shaft.				Surface.							Total by States.	
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	6			1				1					8										1		1	9	9
Alaska																										0	0
Arkansas																										0	1
California, Idaho, and Nevada																										0	0
Colorado	1		1					2					4													4	5
Georgia and North Carolina																										0	0
Illinois	4		4				2	1					11	1				1								12	18
Indiana	1												1			1		1								2	4
Iowa																										2	2
Kansas	1							1					2													2	1
Kentucky	5		3										8											1	1	9	7
Maryland																										0	1
Michigan																										0	2
Missouri																										0	0
Montana	1	1	1										3													3	1
New Mexico			1						1				2													2	5
North Dakota						1							1													1	0
Ohio	7		3										10						1					1	1	11	13
Oklahoma																										0	2
Oregon																										0	0
Pennsylvania (bituminous)	5	1	2										8						1	1				1	3	11	29
South Dakota																										0	3
Tennessee																										0	0
Texas																										0	0
Utah			1										1													1	2
Virginia	2							1					3													3	1
Washington																										0	1
West Virginia	9		3			2		1		1			16											1	1	17	24
Wyoming									1				1													1	3
Total (bituminous)	42	2	19	1		3	2	7	2	1			79	1		1		2	2	1			1	3	7	88	133
Pennsylvania (anthracite)	14	4	6	7		9						3	43	1				1			3			2	5	49	48
Total, March, 1921	56	6	25	8		12	2	7	2	1		3	122	2		1		3	2	1	3		1	5	12	137	
Total, March, 1920	80	8	33	7	1	8	1	5	2	3		9	157	1		1		2	9	1	2		3	7	22		181

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TABLE 8.—*United States: Coal-mine fatalities during* **April,** *1921, by causes and States.*

State.	Underground.													Shaft.					Surface.							Total by States.	
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	8					1							9													9	5
Alaska																										0	0
Arkansas	1												1													1	0
California, Idaho, and Nevada																										0	0
Colorado	1	1	1										3													3	4
Georgia and North Carolina																											0
Illinois	2		7	1									10													10	9
Indiana	2		1					1				1	5													5	6
Iowa	2	1											3													3	2
Kansas					2								2													2	1
Kentucky	4		1			2		1	1				9													9	7
Maryland																										0	0
Michigan																										0	1
Missouri						1							1													1	2
Montana						1							1													1	2
New Mexico	2		1										3													3	12
North Dakota				1									1													1	0
Ohio	5		2			1							8										1		1	9	14
Oklahoma	2												2	1				1								3	4
Oregon																										0	0
Pennsylvania (bituminous)	6	2	4			1		1					14													14	31
South Dakota																										0	0
Tennessee	1												1													1	0
Texas																										0	1
Utah	1												1													1	0
Virginia			1										1													1	1
Washington																										1	0
West Virginia	17	1	6			2							26		1			1								28	21
Wyoming	1	1	1										3													3	4
Total (bituminous)	55	6	25	2	2	9		3	1			1	104	1	1			2					1	2	3	109	127
Pennsylvania (anthracite)	24	4	4	8		7						6	53							1				1	2	55	35
Total, April, 1921	79	10	29	10	2	16		3	1			7	157	1	1			2		1			1	3	5	164	
Total, April, 1920	75	5	37	7	5	13	1	3				2	148			2		2	5	1	2		1	3	12		162

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TABLE 9.—*United States: Coal-mine fatalities during* ***May,*** *1921, by causes and States.*

State.	Underground.													Shaft.					Surface.							Total by States.	
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	3	....	....	....	....	....	....	2	....	....	....	....	5	....	....	....	....	....	....	....	....	....	....	....	....	5	7
Alaska	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Arkansas	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
California, Idaho, and Nevada	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Colorado	1	....	1	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	2	7
Georgia and North Carolina	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Illinois	9	....	6	....	....	....	....	1	....	....	....	....	16	1	....	....	....	1	....	....	....	....	....	....	....	17	10
Indiana	3	....	....	....	....	2	....	....	....	....	....	....	5	....	....	....	....	....	....	....	....	....	....	....	....	5	9
Iowa	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	3
Kansas	....	....	....	....	2	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	2	1
Kentucky	6	2	1	....	....	3	....	1	....	....	....	....	13	....	....	....	....	....	....	....	....	....	....	1	....	1	14	7
Maryland	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	1
Michigan	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	2
Missouri	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Montana	1	....	....	....	....	....	....	1	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	2	2
New Mexico	....	....	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	0
North Dakota	....	....	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	0
Ohio	2	....	3	....	....	....	....	....	....	....	....	1	6	....	....	....	....	....	....	....	....	....	....	....	....	....	6	3
Oklahoma	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Oregon	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Pennsylvania (bituminous)	8	8	5	2	....	1	....	....	....	2	....	2	28	....	....	....	....	....	....	....	....	....	....	....	....	....	28	24
South Dakota	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	2
Texas	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	1
Utah	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	2
Virginia	2	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	2	2
Washington	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	2
West Virginia	18	1	9	....	....	2	....	1	....	....	....	....	31	....	....	....	....	....	....	3	1	....	....	....	2	6	37	21
Wyoming	4	....	....	....	....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	4	3
Total (bituminous)	**60**	**11**	**27**	**2**	**2**	**8**	....	**6**	....	**2**	....	**3**	**121**	**1**	....	....	....	**1**	**3**	**1**	....	....	**1**	**2**	**7**	**129**	**111**
Pennsylvania (anthracite)	16	4	6	2	....	3	1	....	....	1	....	9	42	1	....	....	....	1	....	1	....	....	....	....	....	1	44	52
Total, May, 1921	**76**	**15**	**33**	**4**	**2**	**11**	**1**	**6**	....	**3**	....	**12**	**163**	**2**	....	....	....	**2**	**3**	**2**	....	....	....	**1**	**2**	**8**	**173**	.....
Total, May, 1920	60	11	36	10	2	7	2	5	....	3	....	2	138	4	.....	4	....	8	5	2	4	.....	2	4	17	.....	163

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TABLE 10.—*United States: Coal-mine fatalities during* **June,** *1921, by causes and States.*

State.	Underground.													Shaft.					Surface.							Total by States.	
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	3							2					5													5	6
Alaska																										0	0
Arkansas																										0	0
California, Idaho, and Nevada																										0	0
Colorado	3		1										4						1						1	5	7
Georgia and North Carolina																										0	0
Illinois	9		5					1				2	17			2		2								19	24
Indiana	3		1										4	1		1		2								6	5
Iowa															1			1								1	1
Kansas																										1	3
Kentucky	6		2			3		2					13							1					1	14	13
Maryland	1												1													1	0
Michigan																										0	0
Missouri	3												3													3	0
Montana								1					1													1	0
New Mexico	1												1													1	5
North Dakota																										0	0
Ohio	5		1					1					7													7	14
Oklahoma	1												1													1	6
Oregon																										0	0
Pennsylvania (bituminous)	11	2	3			3		2					21													23	52
South Dakota																										0	0
Tennessee								1					1													1	2
Texas																										0	0
Utah																										0	2
Virginia	2												2													2	1
Washington	1		1										2													2	0
West Virginia	14	1	7			1		3		1			27						2		1			1	4	31	24
Wyoming	1												1													1	4
Total (bituminous)	**64**	**3**	**21**			**7**		**13**		**1**		**2**	**111**	**1**	**1**	**3**		**5**	**3**	**2**	**1**			**3**	**9**	**125**	**169**
Pennsylvania (anthracite)	14	7	4	5		6		2				5	43	1	1			2								45	50
Total, June, 1921	**78**	**10**	**25**	**5**		**13**		**15**		**1**		**7**	**154**	**2**	**2**	**3**		**7**	**3**	**2**	**1**			**3**	**9**	**170**	
Total, June, 1920	106	15	22	28	3	10	3	8		5		2	202	4	1			5	3	1	1	1	1	5	12		219

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TABLE 11.—*United States: Coal-mine fatalities during* ***July,*** *1921, by causes and States.*

State.	Underground.													Shaft.					Surface.								Total by States.	
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	1					2							3													3	4
Alaska																										0	0
Arkansas	3												3													3	1
California, Idaho, and Nevada																										0	0
Colorado		1											1													1	5
Georgia and North Carolina																											0
Illinois	1		3					1				2	7	1				1								8	11
Indiana						2							2	1				1								3	3
Iowa	4							1					5													5	1
Kansas			1										1													1	2
Kentucky	6		2				2	1					11													11	8
Maryland																										0	2
Michigan																										0	1
Missouri																										0	2
Montana	1												1											1	1	2	1
New Mexico	2												2													2	2
North Dakota																										0	0
Ohio	9		1					1					11													11	12
Oklahoma		1											1													1	0
Oregon																										0	0
Pennsylvania (bituminous)	2	2	6			2		4					16							2		1		1	4	20	41
South Dakota																										0	0
Tennessee			2										2													2	1
Texas														1				1								1	1
Utah										1			1													1	3
Virginia																										0	3
Washington																										0	4
West Virginia	21		6	4		1		1		1			34						1	2					3	37	30
Wyoming	1		1					1					3													3	12
Total (bituminous)	**51**	**4**	**22**	**4**		**7**	**2**	**10**		**2**		**2**	**104**	**3**				**3**	**1**	**4**		**1**		**2**	**8**	**115**	**150**
Pennsylvania (anthracite)	17	2	8	7		5			1			2	42	2				2		1	1			1	3	47	44
Total, July, 1921	**68**	**6**	**30**	**11**		**12**	**2**	**10**	**1**	**2**		**4**	**146**	**5**				**5**	**1**	**5**	**1**	**1**		**3**	**11**	**162**	
Total, July, 1920	89	12	31	12		10		7		3		7	171			2		2	2	3	1	1	2	12	21		194

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TABLE 12.—*United States: Coal-mine fatalities during* **August,** *1921, by causes and States.*

State.	Underground.													Shaft.					Surface.							Total by States.	
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	3	.....	4	.....	.....	2	.....	2	.....	.....	.....	.....	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11	2
Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Arkansas	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	0
California, Idaho, and Nevada	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Colorado	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	4	1
Georgia and North Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Illinois	9	.....	.....	.....	1	11	.....	.....	.....	.....	.....	.....	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	22	24
Indiana	1	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	7
Iowa	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	4
Kansas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Kentucky	4	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	11
Maryland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Michigan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Missouri	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	0
Montana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
North Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Ohio	9	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	11
Oklahoma	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	3	12
Oregon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Pennsylvania (bituminous)	14	6	3	.....	.....	.....	.....	.....	.....	.....	2	.....	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25	42
South Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Tennessee	1	1	.....	.....	.....	1	.....	.....	.....	.....	.....	1	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	2
Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	1
Utah	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	2	4
Virginia	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2
Washington	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
West Virginia	8	.....	8	.....	.....	3	.....	.....	.....	.....	.....	.....	19	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	2	21	34
Wyoming	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	3
Total (bituminous)	**54**	**9**	**18**	.....	**1**	**20**	**1**	**3**	.....	**1**	**2**	**1**	**110**	.....	**1**	.....	.....	**1**	**1**	**2**	.....	.....	**2**	**1**	**6**	**117**	**161**
Pennsylvania (anthracite)	14	2	6	3	.....	7	.....	2	.....	.....	.....	2	36	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	2	38	42
Total, August, 1921	**68**	**11**	**24**	**3**	**1**	**27**	**1**	**5**	.....	**1**	**2**	**3**	**146**	.....	**1**	.....	.....	**1**	**1**	**3**	.....	.....	**2**	**2**	**8**	**155**	.....
Total, August, 1920	88	11	38	14	.....	5	1	10	2	.....	.....	4	173	.....	6	1	1	8	5	3	1	1	6	6	22	.....	203

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TABLE 13.—*United States: Coal-mine fatalities during* **September,** *1921, by causes and States.*

State.	Underground.													Shaft.					Surface.							Total by States.	
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	4	....	....	....	....	1	....	....	....	....	....	....	5	....	....	....	....	....	....	....	....	....	....	....	....	5	9
Alaska	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Arkansas	1	....	....	....	....	....	....	1	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	2	0
California, Idaho, and Nevada	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Colorado	2	1	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	3	7
Georgia and North Carolina	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0
Illinois	8	....	4	2	....	....	....	....	....	....	....	....	14	....	....	....	....	....	....	....	....	....	....	....	....	14	17
Indiana	2	....	....	....	....	....	....	1	....	....	....	....	3	1	....	....	....	1	....	....	....	....	....	....	....	4	15
Iowa	3	....	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	3	3
Kansas	4	....	....	....	....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	4	2
Kentucky	3	1	1	1	....	2	....	1	....	....	....	....	9	....	....	....	....	....	....	....	....	....	....	....	....	9	14
Maryland	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Michigan	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Missouri	4	....	....	....	....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	4	0
Montana	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	1
New Mexico	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	4
North Dakota	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Ohio	2	....	3	....	....	....	....	....	....	....	....	....	5	....	....	....	....	....	....	....	1	....	....	....	....	6	18
Oklahoma	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	1	3
Oregon	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Pennsylvania (bituminous)	17	5	4	....	....	1	....	....	....	....	....	5	32	....	....	....	....	....	1	....	....	....	2	....	3	35	45
South Dakota	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Tennessee	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Texas	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	1
Utah	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	4
Virginia	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	0
Washington	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	1
West Virginia	12	....	7	....	....	2	....	1	....	....	....	....	22	1	....	....	....	1	....	....	....	....	1	2	3	26	31
Wyoming	3	....	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	3	1
Total (bituminous)	67	7	19	3	....	6	....	5	....	1	....	5	113	2	....	....	....	2	1	1	....	....	3	2	7	122	178
Pennsylvania (anthracite)	12	4	5	5	....	10	....	....	....	....	....	5	41	....	....	....	....	....	....	....	3	....	1	....	4	45	20
Total, September, 1921	79	11	24	8	....	16	....	5	....	1	....	10	154	2	....	....	....	2	1	1	3	....	4	2	11	167	....
Total, September, 1920	98	8	35	10	....	17	1	10	....	3	....	2	184	1	....	....	....	1	3	1	1	....	....	8	13	....	198

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TABLE 14.—*United States: Coal-mine fatalities during* **October,** *1921, by causes and States.*

State.	Underground.													Shaft.					Surface.								Total by States.	
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	1		1				1						3													3	5
Alaska																										0	1
Arkansas	1												1													1	0
California, Idaho, and Nevada																										0	1
Colorado	3	1											4							1					1	5	4
Georgia and North Carolina																										0	0
Illinois	10		2		2			3					17													17	29
Indiana	1					3						1	5													5	12
Iowa	2												2													2	2
Kansas																										0	2
Kentucky	6		4		2					1			13													13	14
Maryland	1		1										2													2	1
Michigan																										0	1
Missouri	1												1													1	0
Montana																										0	1
New Mexico								1					1													1	0
North Dakota																										0	0
Ohio	8		4										12													12	12
Oklahoma	3		1								1		5													5	2
Oregon																										0	0
Pennsylvania (bituminous)	17	3	6			1		2				2	31											2	2	33	29
South Dakota																										0	0
Tennessee																										0	1
Texas																										0	0
Utah	1												1													1	6
Virginia																										0	3
Washington																										0	0
West Virginia	18		9					4					31						1						1	32	33
Wyoming	3		1										4													1	2
Total (bituminous)	76	4	29		4	4	1	10		1	1	3	133						1	1			1	2	5	138	159
Pennsylvania (anthracite)	21		5	3		6						2	37		1	1		2			1		1	1	3	42	35
Total, October, 1921	97	4	34	3	4	10	1	10		1	1	5	170		1	1		2	1	1	1		2	3	8	180	
Total, October, 1920	90	15	41	6	4	8	4	6		2		3	179	2		1		3	4	2	2		1	3	12		194

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TABLE 15.—*United States: Coal-mine fatalities during* **November,** *1921, by causes and States.*

State.	Underground.													Shaft.					Surface.							Total by States.	
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	2	.....	1	.....	.....	1	.....	1	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	6	19
Alaska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Arkansas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	2
California, Idaho, and Nevada	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	2
Colorado	2	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	7
Georgia and North Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Illinois	9	.....	3	.....	.....	.....	.....	1	.....	.....	.....	.....	13	.....	.....	3	.....	3	.....	.....	.....	.....	.....	.....	.....	16	18
Indiana	3	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	5	1	.....	1	.....	2	.....	.....	.....	.....	.....	.....	.....	7	6
Iowa	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1
Kansas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	5
Kentucky	2	.....	2	.....	.....	.....	.....	2	.....	.....	.....	.....	6	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	7	18
Maryland	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	0
Michigan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Missouri	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	4
Montana	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
New Mexico	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	2
North Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	2
Ohio	8	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	11
Oklahoma	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	3
Oregon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Pennsylvania (bituminous)	8	3	3	.....	.....	4	.....	1	.....	2	.....	1	22	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	2	24	29
South Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Tennessee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	5
Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Utah	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	2	1
Virginia	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2
Washington	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	0
West Virginia	14	.....	3	.....	.....	1	.....	1	.....	.....	.....	.....	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	20	26
Wyoming	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	5
Total (bituminous)	56	4	20	.....	.....	8	.....	6	.....	2	.....	1	97	1	.....	4	.....	5	1	1	3	.....	.....	1	6	108	167
Pennsylvania (anthracite)	19	1	7	10	.....	7	.....	.....	.....	.....	.....	3	47	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	1	3	50	31
Total, November, 1921	75	5	27	10	.....	15	....	6	....	2	....	4	144	1	.....	4	....	5	1	1	5	.....	.....	2	9	158	.....
Total, November, 1920	85	10	34	14	2	11	3	5	....	4	7	4	179	2	.....	2	1	5	3	....	2	1	3	5	14	.....	198

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TABLE 16.—*United States: Coal-mine fatalities during* **December,** *1921, by causes and States.*

State.	Underground.													Shaft.					Surface.							Total by States.	
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1921	1920
Alabama	2	....	....	5	....	....	....	2	....	....	....	....	9	....	....	....	....	....	....	....	....	....	....	....	....	9	6
Alaska	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Arkansas	....	....	....	6	....	1	....	....	....	....	....	....	7	1	....	....	....	1	....	....	....	....	....	....	....	8	1
California, Idaho, and Nevada	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Colorado	1	1	....	....	....	....	....	....	....	....	6	....	8	....	....	....	....	....	....	....	....	....	....	....	....	8	7
Georgia and North Carolina	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Illinois	11	....	5	2	3	....	....	....	....	....	....	....	21	....	1	....	....	1	....	....	....	....	....	....	....	22	15
Indiana	2	....	1	....	....	....	....	....	1	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	4	6
Iowa	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	2
Kansas	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	3
Kentucky	1	....	1	....	....	....	....	....	....	....	....	2	4	....	....	....	....	....	....	....	....	....	....	....	....	4	6
Maryland	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Michigan	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Missouri	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	1
Montana	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	4
New Mexico	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	0
North Dakota	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Ohio	8	....	....	....	....	....	....	....	....	....	....	....	8	....	....	....	....	....	....	....	....	....	....	1	1	9	13
Oklahoma	....	....	1	1	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	2	2
Oregon	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Pennsylvania (bituminous)	9	2	2	....	....	1	....	1	....	....	....	....	15	....	....	....	....	....	....	....	....	....	....	1	1	2	17	31
South Dakota	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	2
Texas	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0
Utah	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	4
Virginia	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	1
Washington	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	5
West Virginia	12	....	3	....	....	....	....	....	....	....	....	....	15	....	1	....	....	1	....	....	....	....	....	2	2	18	29
Wyoming	2	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	2	5
Total (bituminous)	51	4	13	14	3	2	....	3	1	....	6	2	99	1	2	....	....	3	....	....	....	....	1	4	5	107	143
Pennsylvania (anthracite)	23	2	4	8	....	1	1	....	1	....	....	1	41	1	....	....	....	1	....	....	....	....	1	....	1	43	48
Total, December, 1921	74	6	17	22	3	3	1	3	2	....	6	3	140	2	2	....	....	4	....	....	....	....	2	4	6	150	....
Total, December, 1920	91	8	38	4	8	12	....	2	....	3	....	5	171	3	....	....	....	3	4	....	4	....	1	8	17	....	191

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DETAILS RELATING TO PRINCIPAL CAUSES OF FATALITIES.

In order that more detailed information may be available regarding accidents attributed generally to falls of roof, haulage, electricity, explosives, etc., all fatal accidents at coal mines since 1916 have been presented in Table 17 according to the bureau's classification of causes. It is believed that the figures therein contained should be of considerable assistance to all persons interested in the prevention of mine accidents.

TABLE 17.—*United States: Coal-mine fatalities by detailed causes,* ***1916*** *to* ***1921.***

Cause.	1916	1917	1918	1919	1920	1921											
						Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
NUMBER KILLED UNDERGROUND.																		
1. Falls of roof (coal, rock, etc.):																		
(a) At working face	670	707	764	643	632	56	44	37	35	55	45	34	33	35	50	46	45	515
(b) In room or chamber	147	178	179	122	189	26	13	6	27	16	15	12	15	28	26	10	18	212
(c) On road, entry, or gangway	137	164	225	164	173	19	10	13	16	5	18	19	20	16	20	17	10	183
(d) On slope	8	8	14	17	10	.....	1	.....	1	.....	.....	3	.....	.....	1	2	1	9
Total	962	1,057	1,182	946	1,004	101	68	56	79	76	78	68	68	79	97	75	74	919
2. Falls of face or pillar coal:																		
(a) At working face	87	151	95	129	99	7	7	6	9	14	10	3	7	10	3	4	6	86
(b) On road, entry, or gangway	16	22	17	25	29	1	1	.....	1	1	.....	3	4	1	1	1	.....	14
Total	103	173	112	154	128	8	8	6	10	15	10	6	11	11	4	5	6	100
3. Mine cars and locomotives:																		
(a) Switching and spragging	17	6	15	12	6	.....	2	.....	2	1	.....	2	3	2	1	.....	.....	13
(b) Coupling cars	12	7	11	6	13	.....	2	2	1	2	2	3	1	2	2	1	.....	18
(c) Falling from trips	43	29	36	17	26	4	.....	.....	1	1	.....	1	.....	2	1	.....	1	11
(d) Run over by car or motor	147	187	203	149	164	16	10	9	17	10	8	9	7	9	9	9	7	126
(e) Caught between car and rib	87	122	113	105	99	12	7	5	5	14	8	9	5	5	12	9	6	97
(f) Caught between car and roof while riding	12	20	27	23	18	2	1	2	2	2	1	4	5	2	3	1	1	26
(g) Runaway car or trip	42	67	68	42	43	3	4	3	1	1	6	1	3	1	2	4	2	31
(h) Miscellaneous	30	50	33	27	39	3	4	4	.....	2	.....	1	.....	1	4	3	.....	22
Total	390	488	506	381	408	40	30	25	29	33	25	30	24	24	34	27	17	338

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4. Gas explosions and burning gas:																		
(a) Due to open light	61	111	55	66	87	3	1	8	8	2	4	9	3	6	3	7	15	69
(b) Due to defective safety lamps	11	.....	2	22	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	3	.....	5
(c) Due to electric arc	4	22	3	19	10	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	2
(d) Due to shot	5	5	9	6	9	1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
(e) Due to explosions of powder	2	2	3	3	9	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	7	9
(f) Miscellaneous	87	57	23	28	15	.....	4	.....	.....	.....	.....	2	.....	1	.....	.....	.....	7
Total	170	197	95	144	130	4	8	8	10	4	5	11	3	8	3	10	22	96
5. Coal-dust explosions (including gas and coal dust combined):																		
(a) Due to open light	31	123	2	22	3	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
(b) Due to defective safety lamps	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(c) Due to electric arc	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(d) Due to shot	22	8	27	24	22	.....	5	.....	2	2	.....	.....	.....	.....	2	.....	.....	11
(e) Due to explosions of powder	3	11	1	1	8	.....	.....	.....	.....	.....	.....	.....	1	.....	2	.....	3	6
(f) Miscellaneous	.....	21	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	56	163	34	47	34	.....	7	.....	2	2	.....	.....	1	.....	4	.....	3	19
6. Explosives:																		
(a) Transportation	21	6	4	97	3	.....	.....	.....	.....	.....	3	.....	3	.....	.....	.....	1	7
(b) Charging	9	5	13	14	4	.....	1	2	1	.....	3	1	.....	1	.....	1	.....	10
(c) Suffocation	7	10	4	3	4	1	.....	.....	1	2	.....	3	13	1	5	2	.....	28
(d) Drilling into old holes	3	1	2	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	4
(e) Striking in loose rock or coal	.....	.....	1	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	3
(f) Thawing	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(g) Caps, detonators, etc	3	2	3	3	3	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2
(h) Unguarded shots	.....	2	.....	3	2	1	1	1	.....	2	.....	1	.....	3	.....	.....	.....	9
(i) Returned too soon	15	8	18	5	12	1	.....	1	2	1	.....	.....	5	2	.....	.....	.....	12
(j) Premature shot	58	44	44	56	57	2	3	6	5	1	4	4	4	2	3	6	1	41
(k) Sparks from match, lamp, or candle	5	5	13	7	5	.....	.....	.....	2	.....	.....	2	1	.....	.....	4	.....	9
(l) Delayed blast	11	5	4	2	13	2	.....	1	.....	1	1	.....	1	2	2	2	1	13
(m) Shot breaking through rib or pillar	7	10	9	6	1	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	2
(n) Miscellaneous	7	12	20	10	21	2	2	1	1	4	1	1	.....	.....	.....	.....	.....	12
Total	146	110	135	206	128	9	8	12	16	11	13	12	27	16	10	15	3	152
7. Suffocation from mine gases	12	8	15	11	18	1	.....	2	.....	1	.....	2	1	.....	1	.....	1	9
8. Electricity:																		
(a) Direct contact with trolley wire	66	46	55	39	29	5	5	1	2	2	3	5	2	2	3	3	2	35
(b) Bar or tool striking trolley wire	5	2	4	2	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1	.....	3
(c) Contact with mining machine	7	5	7	4	9	.....	.....	1	.....	.....	1	1	.....	.....	1	1	1	6
(d) Contact with machine feed wire	7	16	12	14	10	.....	.....	2	.....	.....	2	3	2	1	1	.....	.....	11
(e) Contact with haulage motor	1	4	1	2	3	.....	.....	.....	1	.....	4	.....	.....	.....	.....	.....	.....	5
(f) Miscellaneous	4	6	9	8	22	.....	.....	3	.....	4	5	1	1	2	3	1	.....	20
Total	90	79	88	69	76	5	5	7	3	6	15	10	5	5	10	6	3	80

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TABLE 17.—*United States: Coal-mine fatalities by detailed causes,* ***1916*** *to* ***1921*** —Continued.

Cause.	1916	1917	1918	1919	1920	1921											
						Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
NUMBER KILLED UNDERGROUND—continued.																		
9. Animals	8	9	8	2	4	.....	1	2	1	.....	.....	1	.....	.....	.....	.....	2	7
10. Mining machines (other than 8c)	20	19	17	26	37	3	3	1	.....	3	1	2	1	1	1	2	.....	18
11. Mine fires (burned, suffocated, etc.)	3	2	26	22	8	.....	.....	.....	.....	.....	.....	.....	2	.....	1	.....	6	9
12. Other causes:																		
(a) Fall of person	3	11	5	6	2	3	.....	.....	.....	5	.....	1	1	2	2	1	1	16
(b) Machinery (other than 10)	2	2	1	3	1	.....	.....	.....	1	.....	.....	1	.....	2	.....	.....	.....	4
(c) Rush of coal or gob	21	22	20	15	9	.....	1	.....	.....	4	2	.....	1	1	.....	.....	.....	9
(d) Falling timber	18	12	12	23	11	.....	1	1	2	1	.....	2	.....	1	.....	1	1	10
(e) Suffocation in chutes	1	2	3	2	6	1	1	1	4	.....	1	.....	.....	.....	.....	.....	.....	8
(f) Hand tools, axes, bars, etc	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	1	.....	3
(g) Nails, splinters, etc	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
(h) Miscellaneous	22	21	22	19	16	3	4	.....	.....	2	3	.....	1	4	3	1	1	22
Total	67	70	63	69	45	7	8	3	7	12	7	4	3	10	5	4	3	73
Total underground	**2,027**	**2,375**	**2,281**	**2,077**	**2,020**	**178**	**146**	**122**	**157**	**163**	**154**	**146**	**146**	**154**	**170**	**144**	**140**	**1,820**
NUMBER KILLED IN SHAFT.																		
13. Falling down shafts or slopes	31	21	21	20	27	1	.....	2	1	2	2	5	.....	2	.....	1	2	18
14. Objects falling down shafts or slopes	2	12	9	6	8	1	1	.....	1	.....	2	.....	1	.....	1	.....	2	9
15. Cage, skip, or bucket:																		
(a) Runaway	.....	.....	1	8	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2	.....	3
(b) Riding with rock or coal	.....	1	.....	1	2	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	2
(c) Riding with timber or tools	5	13	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(d) Struck by	4	6	9	4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2
(e) Miscellaneous	3	2	7	6	2	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	2
Total	12	22	17	21	19	.....	.....	1	.....	.....	3	.....	.....	.....	1	4	.....	9

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16. Other causes:																		
(a) Overwinding	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(b) Breaking of cables	.....	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(c) Miscellaneous	3	1	4	6	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	4	5	5	6	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total shaft	**49**	**60**	**52**	**53**	**56**	**2**	**1**	**3**	**2**	**2**	**7**	**5**	**1**	**2**	**2**	**5**	**4**	**36**
NUMBER KILLED ON SURFACE.																		
17. Mine cars and mine locomotives	59	74	87	71	54	7	4	2	.....	3	3	1	1	1	1	1	.....	24
18. Electricity	7	17	15	10	17	.....	.....	1	1	2	2	5	3	1	1	1	.....	17
19. Machinery	22	46	40	22	25	1	1	3	.....	.....	1	1	.....	3	1	5	.....	16
20. Boiler explosions or bursting steam pipes	4	8	7	6	4	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
21. Railway cars and locomotives	16	36	31	22	24	4	3	1	1	1	.....	.....	2	4	2	.....	2	20
22. Other causes:																		
(a) Explosives	2	13	11	1	11	1	.....	1	.....	1	.....	.....	.....	2	.....	.....	.....	5
(b) Fall of person	9	19	12	15	9	1	2	2	1	.....	1	.....	2	.....	.....	.....	.....	9
(c) Falling objects (derricks, booms, etc.)	7	7	12	9	10	1	.....	.....	1	.....	1	1	.....	.....	.....	.....	1	5
(d) Suffocation in chute, bin, or culm	6	4	4	3	6	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
(e) Falls or slides of rock or coal	.....	3	3	10	9	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	2
(f) Steam shovels	.....	3	2	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
(g) Hand tools	.....	.....	.....	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(h) Miscellaneous	18	31	23	14	25	2	2	1	1	1	1	1	.....	.....	2	2	3	16
Total	42	80	67	56	71	5	5	5	3	2	3	3	2	2	3	2	4	39
Total surface	**150**	**261**	**247**	**187**	**195**	**17**	**13**	**12**	**5**	**8**	**9**	**11**	**8**	**11**	**8**	**9**	**6**	**117**
Grand total	**2,226**	**2,696**	**2,580**	**2,317**	**2,271**	**197**	**160**	**137**	**164**	**173**	**170**	**162**	**155**	**167**	**180**	**158**	**150**	**1,973**

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TABLE 18.—*United States: Coal-mine fatalities during the year ended Dec. 31, 1921, by months and States.*

State.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Alabama	4	11	9	9	5	5	3	11	5	3	6	9	80
Alaska													0
Arkansas		1		1			3	1	2	1		8	17
California, Idaho, and Nevada													0
Colorado	4	8	4	3	2	5	1	4	3	5	5	8	52
Georgia and North Carolina													0
Illinois	15	21	12	10	17	19	8	22	14	17	16	22	193
Indiana	10	10	2	5	5	6	3	3	4	5	7	4	64
Iowa	3			3	1	1	5	2	3	2	2		22
Kansas	1	1	2	2	2	1	1		4				14
Kentucky	19	9	9	9	14	14	11	6	9	13	7	4	124
Maryland	2					1			1	2	1		7
Michigan	3												3
Missouri		1		1	1	3		1	4	1			12
Montana	2		3	1	2	1	2				1	1	13
New Mexico			2	3	1	1	2			1	2	1	13
North Dakota		1	1	1	1								4
Ohio	7	10	11	9	6	7	11	10	6	12	10	9	108
Oklahoma	1			3	1	1	1	3	1	5	2	2	20
Oregon													0
Pennsylvania (bituminous)	30	20	11	14	28	23	20	25	35	33	24	17	280
South Dakota													0
Tennessee	2	1		1		1	2	4	1				12
Texas	1						1						2
Utah	4	2	1	1			1	2		1	2	1	15
Virginia	2	4	3	1	2	2		1	1		1		17
Washington	1			1		2		1			1	1	7
West Virginia	30	23	17	28	37	31	37	21	26	32	20	18	320
Wyoming	5	1	1	3	4	1	3		3	5	1	2	29
Total (bituminous)	**146**	**124**	**88**	**109**	**129**	**125**	**115**	**117**	**122**	**138**	**108**	**107**	**1,428**
Pennsylvania (anthracite)	51	36	49	55	44	45	47	38	45	42	50	43	545
Total, 1921	**197**	**160**	**137**	**164**	**173**	**170**	**162**	**155**	**167**	**180**	**158**	**150**	**1,973**

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PRINCIPAL COAL-MINE DISASTERS.

Table 19 gives what is believed to be a complete list of all coal-mine disasters in the United States causing 100 or more deaths each, and all disasters since January 1, 1916, in each of which five or more men were killed.

TABLE 19.—*Coal-mine disasters in the United States in which 100 or more men were killed and those since 1916 in which 5 or more men were killed.*

Date.		Name of mine.	Location of mine.	Nature of accident.	Killed.
1869	Sept. 6	Avondale	Plymouth, Pa	Mine fire	179
1884	Mar. 13	Laurel	Pocahontas, Va	Explosion	112
1891	Jan. 27	Mammouth	Mount Pleasant, Pa	Gas explosion	109
1892	Jan. 7	No. 11	Krebs, Okla	Explosion	100
1900	May 1	Winter quarters Nos. 1 and 4.	Scofield, Utah	Coal-dust explosion	200
1902	May 19	Fraterville	Coal Creek, Tenn	do	184
1902	July 10	Rolling Mill	Johnstown, Pa	Gas explosion	112
1903	June 30	Hanna No. 1	Hanna, Wyo	Mine explosion and fire	169
1904	Jan. 25	Harwick	Cheswick, Pa	Coal-dust explosion	179
1905	Feb. 20	Virginia City	Virginia City, Ala	do	108
1907	Dec. 6	Monongah Nos. 6 and 8	Monongah, W. Va	do	361
1907	Dec. 19	Darr	Jacobs Creek, Pa	do	239
1908	Nov. 28	Rachel and Agnes	Marianna, Pa	do	154
1909	Nov. 13	St. Paul No. 2	Cherry, Ill	Mine fire	259
1911	Apr. 8	Banner	Littleton, Ala	Coal-dust explosion	128
1913	Oct. 22	Stag Canon No. 2	Dawson, N. Mex	do	263
1914	Apr. 28	Eccles Nos. 5 and 6	Eccles, W. Va	Gas explosion	181
1915	Mar. 2	Layland No. 3	Layland, W. Va	Coal-dust explosion	112
1917	Apr. 27	Hastings	Hastings, Colo	do	121
1916	Feb. 8	Lance	Plymouth, Pa	Gas explosion	7
1916	Feb. 11	Jefferson and Clearfield No. 2	Ernest, Pa	do	27
1916	Feb. 29	Davis No. 42	Kempton, W. Va.-Md	Coal-dust explosion	16
1916	Mar. 9	Hollenback	Wilkes-Barre, Pa	Gas explosion	6
1916	Mar. 28	King	Kimball, W. Va	do	6
1916	Mar. 30	Robindale	Seward, Pa	do	8
1916	Aug. 8	Woodward	Wilkes-Barre, Pa	do	6
1916	Oct. 19	Jamison No. 7	Barrackville, W. Va	do	10
1916	Oct. 22	Roden	Marvel, Ala	do	18
1916	Nov. 4	Bessie	Palos, Ala	do	30
1916	Dec. 13	Fidelity No. 9	Stone City, Kans	do	20
1917	Mar. 13	Henderson No. 1	Hendersonville, Pa	do	14
1917	Apr. 18	Lynden	Mason, W. Va	Lightning exploded powder in powder house.	5
1917	Apr. 27	Hastings	Hastings, Colo	Coal-dust explosion	121
1917	June 2	Rend No. 2	Herrin, Ill	Gas explosion	9
1917	Aug. 4	West Kentucky No. 7	Clay, Ky	do	62
1917	Nov. 29	Old Ben No. 11	Christopher, Ill	Coal-dust explosion	17
1917	Dec. 15	Yukon No. 1	Bluefield, W. Va	Gas explosion	17
1917	Dec. 17	Wilkeson	Wilkeson, Wash	Inrush of water and gravel.	6
1917	Dec. 20	Nemo	Harriman, Tenn	Coal-dust explosion	11
1918	May 20	Villa	Charleston, W. Va	Mine fire	13
1918	Aug. 7	Harmar	Harmarville, Pa	Gas explosion	8
1918	Aug. 28	Burnett	Burnett, Wash	Coal-dust explosion	12
1918	Sept. 28	North	Royalton, Ill	Gas explosion	21
1919	Mar. 31	Empire	Aguilar, Colo	do	13
1919	Apr. 29	Majestic	Majestic, Ala	Coal-dust explosion	22
1919	June 5	Baltimore tunnel No. 2	Wilkes-Barre, Pa	Powder explosion	92
1919	June 30	Alderson No. 5	Alderson, Okla	Gas explosion	15
1919	July 8	Lansford colliery	Lansford, Pa	do	8
1919	July 18	Carswell	Kimball, W. Va	do	6
1919	Aug. 6	Weirwood	Weirwood, W. Va	do	7
1919	Aug. 18	Oakdale	Laveta, Colo	do	18
1919	Oct. 29	Amsterdam No. 2	Amsterdam, Ohio	Mine fire	20
1920	Apr. 14	Dawson Nos. 1 and 6	Dawson, N. Mex	Coal-dust explosion	5
1920	May 3	Submarine	Clinton, Ind	Gas explosion	5
1920	June 2	Ontario	Cokeburg, Pa	do	6
1920	July 19	Union	Renton, Pa	do	9
1920	July 26	No. 6	Sublet, Wyo	Blowing up of powder magazine.	8
1920	Aug. 21	No. 19	Degnan, Okla	Gas explosion	10
1920	Nov. 16	Arnold	Earlington, Ky	Mine fire	6
1920	Nov. 23	Parrish	Parrish, Ala	Gas explosion	12
1921	Feb. 12	Oak Hill Nos. 1 and 2	Oak Creek, Colo	Coal-dust explosion	5
1921	Feb. 23	Kathleen	Dowell, Ill	Mine fire	7
1921	Mar. 9	Rahn No. 11	Seek, Pa	Gas explosion	5
1921	Aug. 31	Harco	Harrisburg, Ill	do	11
1921	Dec. 13	Satanic	Morrison, Colo	Mine fire	6

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TABLE 20.—*Production, men employed, and number killed in and about the coal mines in the United States during the year ended Dec. 31, 1919.*

State.	Production (short tons).	Number employed.[a]			Number of days of labor performed.[a]	Average days active.[a]	Number killed.			Number killed per 1,000 300-day workers.			Number killed per 1,000,000 short tons mined.	Production per death (short tons).
		Underground.	Surface.	Total.			Underground.	Surface.	Total.	Underground.	Surface.	Total.		
Alabama	15,536,721	20,660	6,214	**26,874**	**6,414,066**	239	88	5	**93**	5.35	1.01	**4.35**	5.99	167,062
Alaska	60,674	103	63	**166**	46,528	280								
Arkansas	1,429,020	3,096	718	**3,814**	517,761	136	9	1	**10**	6.42	3.08	**5.79**	7.00	142,902
California, Idaho, and Nevada	6,554	54	23	**77**	4,570	59								
Colorado	10,323,420	8,931	2,898	**11,829**	**2,664,561**	225	88	3	**91**	13.12	1.38	**10.25**	8.81	**113,444**
Georgia and North Carolina	60,326	145	72	**217**	52,612	242								
Illinois	60,862,608	75,013	10,007	**85,020**	**13,572,384**	160	167	2	**169**	4.18	.37	**3.74**	2.78	360,134
Indiana	20,912,288	25,316	4,671	**29,987**	4,436,866	148	81	2	**83**	6.49	.87	**5.61**	3.97	251,955
Iowa	5,624,692	10,873	1,493	**12,366**	2,172,690	176	17	.....	**17**	2.67	.....	**2.35**	3.02	330,864
Kansas	5,224,724	8,173	1,753	**9,926**	1,807,057	182	23	2	**25**	4.64	1.88	**4.15**	4.79	208,989
Kentucky	30,036,061	35,530	10,068	**45,598**	8,607,591	189	72	12	**84**	3.22	1.89	**2.93**	2.80	357,572
Maryland	3,021,686	4,422	972	**5,394**	964,802	179	5	.....	**5**	1.90	.....	**1.55**	1.65	604,337
Michigan	996,545	1,851	253	**2,104**	375,734	179	3	.....	**3**	2.72	.....	**2.40**	3.01	332,182
Missouri	3,979,798	7,235	2,079	**9,314**	1,632,703	175	10	.....	**10**	2.37	.....	**1.84**	2.51	397,980
Montana	3,236,369	3,318	805	**4,123**	800,979	194	10	1	**11**	4.65	1.92	**4.12**	3.40	294,215
New Mexico	3,138,756	2,918	827	**3,745**	1,022,318	273	20	5	**25**	7.53	6.64	**7.34**	7.96	125,550
North Dakota	840,959	758	314	**1,072**	231,377	216	3	1	**4**	5.50	4.42	**5.19**	4.76	210,240
Ohio	35,876,682	41,336	8,288	**49,624**	8,121,654	164	135	7	**142**	5.99	1.55	**5.25**	3.96	252,653
Oklahoma	3,802,113	6,996	1,452	**8,448**	1,556,788	184	36	.....	**36**	8.38	.....	**6.94**	9.47	105,614
Oregon	18,739	52	15	**67**	17,332	259								
Pennsylvania (bituminous)	150,758,154	143,838	30,712	**174,550**	37,973,951	218	372	27	**399**	3.57	1.21	**3.15**	2.65	377,840
South Dakota	14,417	43	3	**46**	7,544	164								
Tennessee	5,213,205	8,976	2,547	**11,523**	2,317,689	201	27	.....	**27**	4.49	.....	**3.49**	5.18	193,082
Texas	1,680,656	3,018	626	**3,644**	826,530	227	3	.....	**3**	1.31	.....	**1.09**	1.78	560,219
Utah	4,631,323	2,709	1,148	**3,857**	923,369	239	24	3	**27**	11.10	3.28	**8.77**	5.83	171,530
Virginia	9,326,830	9,471	2,115	**11,586**	2,861,221	247	33	1	**34**	4.23	.57	**3.57**	3.65	274,319
Washington	2,990,447	3,801	1,235	**5,036**	1,094,258	217	14	5	**19**	5.09	5.59	**5.21**	6.35	157,392
West Virginia	79,036,553	74,350	20,355	**94,705**	18,955,691	200	298	34	**332**	6.01	2.50	**5.25**	4.20	238,062
Wyoming	7,219,738	5,815	1,471	**7,286**	1,609,104	221	33	.....	**33**	7.71	.....	**6.15**	4.57	218,780
Total (bituminous)	**465,860,058**	**508,801**	**113,197**	**621,998**	**121,589,730**	**195**	**1,571**	**111**	**1,682**	**4.74**	**1.50**	**4.15**	**3.61**	**276,968**
Pennsylvania (anthracite)	88,092,201	107,829	46,742	**154,571**	41,075,293	266	559	76	**635**	5.85	1.84	**4.64**	7.21	138,728
Total, 1919	**553,952,259**	**616,630**	**159,939**	**776,569**	**162,665,023**	**209**	**2,130**	**187**	**2,317**	**4.95**	**1.67**	**4.27**	**4.18**	**239,082**

[a] Data furnished by the U. S. Geological Survey.

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TABLE 21.—*United States: Coal-mine fatalities during the year ended Dec. 31, 1920, by causes and States.*

State.	Underground.													Shaft.					Surface.								Total by States.	
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	1920	1919
Alabama	29	5	14	13	.....	6	....	4	....	1	....	....	72	....	.....	.....	.....	.....	1	....	....	.....	1	2	4	76	93
Alaska	.....	.....	.....	.....	.....	.....	....	.....	....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Arkansas	7	.....	.....	1	.....	.....	....	.....	....	.....	....	.....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	9	10
California, Idaho, and Nevada	.....	.....	.....	.....	.....	.....	....	.....	....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Colorado	23	11	23	.....	.....	3	....	5	....	.....	....	.....	65	.....	.....	1	.....	1	.....	.....	1	.....	.....	3	4	70	91
Georgia and North Carolina	.....	.....	.....	.....	.....	.....	....	.....	....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Illinois	97	1	50	11	4	9	....	15	....	2	1	3	193	8	.....	2	.....	10	1	.....	.....	.....	3	.....	4	207	169
Indiana	41	.....	10	15	7	3	3	3	....	1	....	1	84	1	.....	2	1	4	.....	.....	.....	.....	.....	.....	.....	88	83
Iowa	19	1	3	.....	.....	.....	....	.....	....	.....	....	.....	23	1	.....	.....	.....	1	.....	.....	.....	.....	.....	1	1	25	17
Kansas	11	.....	1	3	6	2	....	.....	....	.....	....	.....	23	1	1	.....	.....	2	.....	.....	1	.....	.....	.....	1	26	25
Kentucky	68	.....	20	2	2	6	....	6	....	3	7	1	115	1	.....	.....	.....	1	1	1	.....	.....	2	3	7	123	84
Maryland	7	.....	.....	.....	.....	.....	....	.....	....	.....	....	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	5
Michigan	3	.....	1	.....	.....	.....	....	1	....	.....	....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	6	3
Missouri	6	.....	2	.....	.....	1	....	.....	....	.....	....	.....	9	.....	.....	.....	1	1	.....	.....	.....	.....	.....	1	1	11	10
Montana	6	1	4	.....	.....	1	....	1	....	1	....	.....	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14	11
New Mexico	10	7	4	.....	5	1	....	3	....	.....	....	1	31	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	2	33	25
North Dakota	1	.....	.....	.....	1	.....	....	1	....	.....	....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	4
Ohio	79	1	25	3	.....	10	3	2	....	4	....	2	129	1	.....	.....	.....	1	1	.....	.....	.....	2	3	6	136	142
Oklahoma	7	1	4	17	3	2	....	6	....	.....	....	.....	40	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	41	36
Oregon	.....	.....	.....	.....	.....	.....	....	.....	....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Pennsylvania (bituminous)	207	27	79	22	.....	22	1	9	....	10	....	7	384	2	6	1	....	9	7	3	2	3	7	12	34	427	399
South Dakota	.....	.....	.....	.....	.....	.....	....	.....	....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Tennessee	13	3	4	1	.....	.....	....	.....	....	.....	....	.....	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	27
Texas	3	.....	.....	.....	.....	1	....	.....	....	.....	....	.....	4	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	5	3
Utah	11	8	9	.....	.....	.....	1	.....	....	1	....	.....	30	.....	.....	.....	.....	.....	1	3	.....	.....	.....	1	5	35	27
Virginia	5	6	8	3	1	.....	....	.....	....	.....	....	2	25	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	26	34
Washington	7	1	5	.....	.....	.....	....	.....	....	.....	....	3	16	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	2	18	19
West Virginia	166	15	66	3	5	12	....	12	....	11	....	.....	290	1	1	.....	.....	2	15	6	.....	.....	6	5	32	324	332
Wyoming	16	5	10	.....	.....	.....	....	2	....	2	....	.....	35	.....	.....	1	.....	1	1	1	.....	.....	.....	11	13	49	33
Total (bituminous)	**842**	**93**	**342**	**94**	**34**	**79**	**8**	**70**	....	**36**	**8**	**20**	**1,626**	**16**	**8**	**8**	**2**	**34**	**32**	**15**	**5**	**3**	**21**	**44**	**120**	**1,780**	**1,682**
Pennsylvania (anthracite)	162	35	66	36	.....	49	10	6	4	1	....	25	394	11	.....	11	....	22	22	2	20	1	3	27	75	491	635
Total, 1920	**1,004**	**128**	**408**	**130**	**34**	**128**	**18**	**76**	**4**	**37**	**8**	**45**	**2,020**	**27**	**8**	**19**	**2**	**56**	**54**	**17**	**25**	**4**	**24**	**71**	**195**	**2,271**	.....
Total, 1919	946	154	381	144	47	206	11	69	2	26	22	69	2,077	20	6	21	6	53	71	10	22	6	22	56	187	.....	2,317

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TABLE 22.—*United States: Coal-mine fatalities during the year ended Dec. 31, 1920, by months and States.*

State.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Alabama	2	2	9	5	7	6	4	2	9	5	19	6	**76**
Alaska													**0**
Arkansas	2	1	1				1			1	2	1	**9**
California, Idaho, and Nevada													**0**
Colorado	10	6	5	4	7	7	5	1	7	4	7	7	**70**
Georgia and North Carolina													**0**
Illinois	15	17	18	9	10	24	11	24	17	29	18	15	**207**
Indiana	9	6	4	6	9	5	3	7	15	12	6	6	**88**
Iowa	2	2	2	2	3	1	1	4	3	2	1	2	**25**
Kansas	5	1	1	1	1	3	2		2	2	5	3	**26**
Kentucky	11	7	7	7	7	13	8	11	14	14	18	6	**123**
Maryland		1	1		1		2		1	1			**7**
Michigan			2	1	2		1						**6**
Missouri	1			2	1		2				4	1	**11**
Montana	1		1	2	2		1		1	1	1	4	**14**
New Mexico	2	1	5	12		5	2		4		2		**33**
North Dakota		1									2		**3**
Ohio	5	10	13	14	3	14	12	11	18	12	11	13	**136**
Oklahoma	5	1	2	4	1	6		12	3	2	3	2	**41**
Oregon													**0**
Pennsylvania (bituminous)	43	31	29	31	24	52	41	42	45	29	29	31	**427**
South Dakota													**0**
Tennessee	1	1	3		2	2	1	2	1	1	5	2	**21**
Texas				1	1		1	1	1				**5**
Utah	3	6			2	2	3	4	4	6	1	4	**35**
Virginia	6	3	2	1	2	1	3	2		3	2	1	**26**
Washington	3	1	1		2		4	1	1			5	**18**
West Virginia	31	20	24	21	21	24	30	34	31	33	26	29	**324**
Wyoming	4	3	3	4	3	4	12	3	1	2	5	5	**49**
Total (bituminous)	**161**	**121**	**133**	**127**	**111**	**169**	**150**	**161**	**178**	**159**	**167**	**143**	**1,780**
Pennsylvania (anthracite)	47	39	48	35	52	50	44	42	20	35	31	48	**491**
Total, 1920	**208**	**160**	**181**	**162**	**163**	**219**	**194**	**203**	**198**	**194**	**198**	**191**	**2,271**

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TABLE 23.—*Coal-mine fatalities: Percentages by causes,* ***1916*** *to* ***1921.***

Cause.	1916	1917	1918	1919	1920	1921
Underground:						
Falls of roof (coal, rock, etc.)	43.22	39.21	45.82	40.83	44.21	46.58
Falls of face or pillar coal	4.63	6.42	4.34	6.65	5.64	5.07
Mine cars and locomotives	17.52	18.10	19.61	16.44	17.97	17.13
Gas explosions and burning gas	7.64	7.31	3.68	6.21	5.72	4.87
Coal-dust explosions (including gas and dust combined)	2.51	6.04	1.32	2.03	1.50	.96
Explosives	6.56	4.08	5.23	8.89	5.64	7.69
Suffocation from mine gases	.54	.30	.58	.47	.79	.46
Electricity	4.04	2.93	3.41	2.98	3.35	4.05
Animals	.36	.33	.31	.09	.17	.36
Mining machines	.90	.70	.66	1.12	1.63	.91
Mine fires (burned, suffocated, etc.)	.13	.07	1.01	.95	.35	.46
Other causes	3.01	2.60	2.44	2.98	1.98	3.70
Total	**91.06**	**88.09**	**88.41**	**89.64**	**88.95**	**92.24**
Shaft:						
Falling down shafts or slopes	1.39	.78	.81	.86	1.19	.91
Objects falling down shafts or slopes	.09	.45	.35	.26	.35	.46
Cage, skip, or bucket	.54	.82	.66	.91	.83	.46
Other causes	.18	.18	.19	.26	.09	.....
Total	**2.20**	**2.23**	**2.01**	**2.29**	**2.46**	**1.83**
Surface:						
Mine cars and mine locomotives	2.65	2.74	3.38	3.06	2.38	1.22
Electricity	.31	.63	.58	.43	.75	.86
Machinery	.99	1.71	1.55	.95	1.10	.81
Boiler explosions or bursting steam pipes	.18	.30	.27	.26	.17	.05
Railway cars and locomotives	.72	1.33	1.20	.95	1.06	1.01
Other causes	1.89	2.97	2.60	2.42	3.13	1.98
Total	**6.74**	**9.68**	**9.58**	**8.07**	**8.59**	**5.93**
Grand total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
Total killed	2,226	2,696	2,580	2,317	2,271	1,973

COAL PRODUCTION AND FATALITIES, BY MONTHS, 1921.

Table 24 shows the monthly production of coal since 1913 as estimated by the United States Geological Survey. The number of coal-mine fatalities arranged by corresponding months is given in Table 25. Considered together, these two tables are of interest as indicating the fluctuations in output and number of fatalities in different seasons of the year, as well as the relationship between production and accidents in different months, as shown in Table 26.

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TABLE 24.—*Monthly production of anthracite and of bituminous coal in the United States,* ***1913*** *to* ***1921.***[a]

[Net tons—000 omitted.]

	1913		1914		1915		1916		1917		1918		1919		1920		1921[b]	
	Tons.	Per cent.	Tons.	Per cent.	Tons.	Per cent.	Tons.	Per cent.	Tons.	Per cent.	Tons.	Per cent.	Tons.	Per cent.	Tons.	Per cent.	Tons.	Per cent.
Bituminous:																		
January	42,276	8.8	40,188	9.5	37,190	8.4	46,596	9.3	47,967	8.7	42,227	7.3	41,487	9.1	48,688	8.7	40,270	9.89
February	37,057	7.7	35,472	8.4	29,321	6.6	45,187	9.0	41,353	7.5	43,777	7.6	31,566	6.9	40,127	7.2	30,851	7.58
March	37,536	7.8	45,455	10.8	31,801	7.2	43,827	8.7	47,869	8.7	48,113	8.3	33,719	7.3	46,792	8.4	30,392	7.47
April	34,169	7.2	23,609	5.6	29,968	6.8	33,628	6.7	41,854	7.6	46,041	8.0	32,164	7.0	37,939	6.8	27,553	6.77
May	37,205	7.8	28,551	6.8	30,938	7.0	38,804	7.7	47,086	8.5	50,443	8.7	37,547	8.2	39,752	7.1	33,330	8.19
June	37,405	7.8	31,412	7.4	33,957	7.7	37,742	7.5	46,824	8.5	51,138	8.8	37,054	8.1	43,767	7.9	33,896	8.33
July	38,858	8.1	34,305	8.1	35,573	8.0	38,113	7.6	46,292	8.4	54,971	9.5	42,698	9.3	45,523	8.2	30,385	7.46
August	41,590	8.7	37,751	8.9	38,161	8.6	42,696	8.5	47,372	8.6	55,114	9.5	42,883	9.4	48,389	8.7	34,538	8.48
September	41,424	8.7	39,019	9.2	40,964	9.3	42,098	8.4	45,108	8.2	51,183	8.8	47,402	10.3	49,202	8.8	35,127	8.63
October	46,164	9.7	37,685	8.9	44,198	10.0	44,807	8.9	48,337	8.7	52,300	9.0	56,243	12.3	52,635	9.5	43,733	10.74
November	43,233	9.0	33,392	7.9	44,737	10.1	44,927	8.9	47,690	8.6	43,895	7.6	18,688	4.1	51,013	9.2	36,020	8.85
December	41,519	8.7	35,862	8.5	45,814	10.3	44,098	8.8	44,037	8.0	40,184	6.9	36,612	8.0	52,736	9.5	30,975	7.61
Total bituminous	**478,434**	**100.0**	**422,704**	**100.0**	**442,626**	**100.0**	**502,520**	**100.0**	**551,791**	**100.0**	**579,386**	**100.0**	**458,063**	**100.0**	**556,503**	**100.0**	**407,070**	**100.00**
Anthracite:																		
January	8,396	9.2	6,878	7.6	6,337	7.1	7,649	8.7	7,672	7.7	7,270	7.3	7,819	8.9	7,588	8.5	7,410	8.38
February	7,519	8.2	5,477	6.0	5,703	6.4	7,404	8.5	6,688	6.7	7,494	7.6	5,102	5.8	6,525	7.3	7,701	8.71
March	6,505	7.1	6,863	7.6	6,654	7.5	7,964	9.1	9,026	9.1	9,382	9.5	5,190	5.9	7,857	8.8	7,406	8.38
April	7,906	8.6	8,069	8.9	8,725	9.8	5,887	6.7	7,222	7.3	8,211	8.3	6,884	7.8	6,225	7.0	7,703	8.72
May	7,945	8.7	8,348	9.2	7,807	8.8	7,212	8.2	8,933	9.0	8,880	9.0	7,525	8.5	7,959	8.9	7,668	8.68
June	7,911	8.6	8,147	9.0	7,157	8.0	7,327	8.4	9,103	9.1	8,855	9.0	7,404	8.4	8,171	9.2	8,254	9.34
July	7,272	7.9	7,165	7.9	6,691	7.5	7,062	8.1	8,684	8.7	9,134	9.2	7,974	9.1	8,261	9.3	7,050	7.98
August	7,116	7.8	7,288	8.0	7,161	8.0	7,190	8.2	9,058	9.1	9,258	9.4	8,096	9.2	8,025	9.0	7,658	8.66
September	7,384	8.1	8,301	9.1	7,423	8.3	7,206	8.2	8,230	8.2	8,038	8.1	7,494	8.5	4,646	5.2	7,124	8.05
October	8,399	9.2	8,830	9.7	8,761	9.9	7,630	8.7	9,183	9.2	8,105	8.2	8,645	9.8	8,069	9.1	7,580	8.57
November	7,668	8.4	7,878	8.7	8,514	9.6	7,790	8.9	8,453	8.5	6,803	6.9	7,870	8.9	7,453	8.4	6,859	7.76
December	7,504	8.2	7,578	8.3	8,062	9.1	7,257	8.3	7,360	7.4	7,396	7.5	8,089	9.2	8,321	9.3	5,984	6.77
Total anthracite	**91,525**	**100.0**	**90,822**	**100.0**	**88,995**	**100.0**	**87,578**	**100.0**	**99,612**	**100.0**	**98,826**	**100.0**	**88,092**	**100.0**	**89,100**	**100.0**	**88,397**	**100.00**
Grand total	**570,048**	.....	**513,525**	.....	**531,619**	.....	**590,098**	.....	**651,402**	.....	**678,212**	.....	**546,155**	.....	**645,663**	.....	**495,467**	.....

[a] Monthly production estimated for bituminous coal on basis of rail shipments; for anthracite, on basis of monthly reports of Anthracite Bureau of Information. The above monthly production figures were compiled by the U. S. Geological Survey, and percentages calculated by the U. S. Bureau of Mines.

[b] The estimated production for 1921 differs slightly from the total obtained by adding the estimated monthly output. See page 7.

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TABLE 25.—*Coal-mine fatalities by months and years,* ***1913*** *to* ***1921.***

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Bituminous:													
1913	168	150	150	229	144	139	137	176	132	426	168	148	2,167
1914	167	130	165	298	101	143	125	141	148	192	113	136	1,859
1915	113	133	235	114	99	104	165	129	135	133	181	142	1,683
1916	135	178	128	115	116	108	139	155	116	145	179	157	1,671
1917	170	130	182	260	136	188	189	217	140	142	173	187	2,114
1918	160	171	148	169	168	183	214	194	198	172	125	127	2,029
1919	139	129	138	141	141	151	154	180	138	195	59	117	1,682
1920	161	121	133	127	111	169	150	161	178	159	167	143	1,780
1921	146	124	88	109	129	125	115	117	122	138	108	107	1,428
Total	1,359	1,266	1,367	1,562	1,145	1,310	1,388	1,470	1,307	1,702	1,273	1,264	16,413
Anthracite:													
1913	55	58	52	56	62	53	47	67	41	50	34	43	618
1914	36	42	48	56	63	47	43	39	61	61	46	53	595
1915	53	46	47	55	54	45	32	50	43	56	59	46	586
1916	64	47	70	39	28	39	40	53	45	52	32	46	555
1917	57	38	48	49	45	44	58	52	41	55	57	38	582
1918	55	51	48	46	43	47	62	55	32	43	32	37	551
1919	44	31	33	48	44	144	68	43	41	49	36	54	635
1920	47	39	48	35	52	50	44	42	20	35	31	48	491
1921	51	36	49	55	44	45	47	38	45	42	50	43	545
Total	462	388	443	439	435	514	441	439	369	443	377	408	5,158

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TABLE 26.—*United States: Fatality rates per million tons mined, by months and years, 1913 to 1921.*

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Bituminous:													
1913	3.97	4.05	4.00	6.70	3.87	3.72	3.53	4.23	3.19	9.23	3.89	3.56	**4.53**
1914	4.16	3.66	3.63	12.62	3.54	4.55	3.64	3.74	3.79	5.09	3.38	3.79	**4.40**
1915	3.04	4.54	7.39	3.80	3.20	3.06	4.64	3.38	3.30	3.01	4.05	3.10	**3.80**
1916	2.90	3.94	2.92	3.42	2.99	2.86	3.65	3.63	2.76	3.24	3.98	3.56	**3.33**
1917	3.54	3.14	3.80	6.21	2.89	4.02	4.08	4.58	3.10	2.94	3.63	4.25	**3.83**
1918	3.79	3.91	3.08	3.67	3.33	3.58	3.89	3.52	3.87	3.29	2.85	3.16	**3.50**
1919	3.35	4.09	4.09	4.38	3.76	4.08	3.61	4.20	2.91	3.47	3.16	3.20	**3.67**
1920	3.31	3.02	2.84	3.35	2.79	3.86	3.30	3.33	3.62	3.02	3.27	2.71	**3.20**
1921	3.63	4.02	2.90	3.96	3.87	3.69	3.78	3.39	3.47	3.16	3.00	3.45	**3.51**
Anthracite:													
1913	6.55	7.71	7.99	7.08	7.80	6.70	6.46	9.42	5.55	5.95	4.43	5.73	**6.75**
1914	5.23	7.67	6.99	6.94	7.55	5.77	6.00	5.35	7.35	6.91	5.84	6.99	**6.55**
1915	8.36	8.07	7.06	6.30	6.92	6.29	4.78	6.98	5.79	6.39	6.93	5.71	**6.58**
1916	8.37	6.35	8.79	6.62	3.88	5.32	5.66	7.37	6.24	6.82	4.11	6.34	**6.34**
1917	7.43	5.68	5.32	6.78	5.04	4.83	6.68	5.74	4.98	5.99	6.74	5.16	**5.84**
1918	7.57	6.81	5.12	5.60	4.84	5.31	6.79	5.94	3.98	5.31	4.70	5.00	**5.58**
1919	5.63	6.08	6.36	6.97	5.85	19.45	8.53	5.31	5.47	5.67	4.57	6.68	**7.21**
1920	6.19	5.98	6.11	5.62	6.53	6.12	5.33	5.23	4.30	4.34	4.16	5.77	**5.51**
1921	6.88	4.67	6.62	7.14	5.74	5.45	6.67	4.96	6.32	5.54	7.29	7.19	**6.17**
Bituminous and anthracite:													
1913	4.40	4.67	4.59	6.77	4.56	4.24	3.99	4.99	3.54	8.72	3.97	3.90	**4.89**
1914	4.31	4.20	4.07	11.17	4.44	4.80	4.05	4.00	4.42	5.44	3.85	4.35	**4.78**
1915	3.81	5.11	7.33	4.37	3.95	3.62	4.66	3.95	3.68	3.57	4.51	3.49	**4.27**
1916	3.67	4.28	3.82	3.90	3.13	3.26	3.96	4.17	3.27	3.76	4.00	3.95	**3.77**
1917	4.08	3.50	4.04	6.30	3.23	4.15	4.49	4.77	3.39	3.42	4.10	4.38	**4.14**
1918	4.34	4.33	3.41	3.96	3.56	3.83	4.31	3.87	3.88	3.56	3.10	3.45	**3.80**
1919	3.71	4.36	4.39	4.84	4.10	6.64	4.38	4.37	3.26	3.76	3.58	3.83	**4.24**
1920	3.70	3.43	3.31	3.67	3.42	4.22	3.61	3.60	3.68	3.20	3.39	3.13	**3.52**
1921	4.13	4.15	3.62	4.65	4.22	4.03	4.33	3.67	3.95	3.51	3.68	4.06	**3.99**

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TABLE 27.—*United States: Coal-mine fatalities during the years* **1916** *to* **1921**, *by causes and States.*

State.	Underground.													Shaft.					Surface.							Grand total.
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	
	1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16		17	18	19	20	21	22		
Alabama:																										
1916	28	....	15	23	32	3	....	10	....	....	....	4	115	....	....	1	....	1	....	....	....	....	1	2	3	119
1917	49	3	24	12	....	3	....	9	....	....	....	....	100	....	....	....	....	....	3	....	4	....	1	....	8	108
1918	58	....	23	6	2	5	2	4	....	....	....	6	106	1	....	....	....	1	....	....	....	1	2	....	3	110
1919	36	....	15	2	22	2	....	9	....	1	....	1	88	....	....	....	....	....	1	....	1	....	3	....	5	93
1920	29	5	14	13	....	6	....	4	....	1	....	....	72	....	....	....	....	....	1	....	....	....	1	2	4	76
1921	39	....	12	6	....	8	1	12	....	....	....	....	78	....	....	....	....	....	....	....	1	....	1	....	2	80
Alaska:																										
1916	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0
1917	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0
1818	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0
1919	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0
1920	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0
1921	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0
Arkansas:																										
1916	4	....	....	1	2	....	....	....	....	....	....	....	7	....	....	....	....	....	....	....	....	....	....	....	....	7
1917	7	....	1	2	5	....	....	....	....	....	....	1	16	....	....	1	....	1	....	....	....	....	....	....	....	17
1918	3	....	3	2	4	....	....	1	....	....	....	....	13	....	....	....	....	....	....	....	....	....	....	....	....	13
1919	6	1	....	....	1	....	....	1	....	....	....	....	9	....	....	....	....	....	....	....	....	....	....	1	1	10
1920	7	....	....	1	....	....	....	....	....	....	....	....	8	....	....	....	....	....	....	....	....	....	....	1	1	9
1921	7	....	....	6	....	2	....	1	....	....	....	....	16	1	....	....	....	1	....	....	....	....	....	....	....	17
California, Idaho, and Nevada:																										
1916	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0
1917	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0
1918	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0
1919	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0
1920	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0
1921	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0

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TABLE 27.—*United States: Coal-mine fatalities during the years* **1916** *to* **1921**, *by causes and States*—Continued.

State.	Underground.													Shaft.					Surface.							Grand total.
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	
	1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16		17	18	19	20	21	22		
Colorado:																										
1916	17	8	7	....	.....	1	....	5	.....	.....	....	1	39	.....	.....	.....	.....	.....	1	....	1	1	....	1	4	43
1917	32	12	12	1	121	1	....	2	.....	1	....	2	184	.....	.....	.....	.....	.....	3	....	1	.....	.....	.....	4	188
1918	18	17	20	5	.....	2	....	5	1	.....	....	1	69	.....	.....	.....	.....	.....	.....	....	1	.....	1	.....	2	71
1919	20	20	8	31	.....	.....	1	6	1	.....	....	.....	87	.....	.....	1	....	1	1	....	1	1	....	.....	3	91
1920	23	11	23	.....	.....	3	....	5	.....	.....	....	.....	65	.....	.....	1	....	1	.....	....	1	.....	.....	3	4	70
1921	21	6	8	.....	5	.....	....	3	.....	.....	6	....	49	.....	.....	.....	.....	.....	1	2	.....	.....	.....	.....	3	52
Georgia:																										
1916	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	1
1917	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
1918	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	2
1919	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0
1920	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0
1921	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0
Illinois:																										
1916	48	2	54	7	.....	6	....	1	.....	.....	1	5	124	3	.....	1	....	4	.....	.....	.....	.....	.....	.....	.....	128
1917	61	16	58	18	17	9	....	10	4	1	....	8	202	5	.....	8	....	13	....	1	2	3	8	4	18	233
1918	100	.....	67	29	4	12	....	7	2	....	3	4	228	.....	5	3	1	9	.....	.....	.....	.....	1	.....	1	238
1919	77	9	43	8	7	2	....	9	.....	.....	.....	2	157	6	.....	4	....	10	.....	.....	.....	.....	1	1	2	169
1920	97	1	50	11	4	9	....	15	....	2	1	3	193	8	.....	2	....	10	1	.....	.....	.....	3	.....	4	207
1921	92	.....	48	9	6	11	2	9	.....	.....	.....	4	181	3	1	5	....	9	.....	.....	.....	.....	3	.....	3	193
Indiana:																										
1916	16	1	12	4	2	5	....	3	.....	.....	.....	.....	43	2	.....	2	2	6	.....	.....	1	.....	.....	1	2	51
1917	34	3	12	8	.....	8	....	5	.....	.....	.....	.....	70	1	1	.....	3	5	.....	.....	.....	.....	.....	1	1	76
1918	43	2	19	8	2	10	....	5	.....	.....	.....	.....	89	3	.....	1	2	6	1	.....	.....	.....	2	2	5	100
1919	33	.....	17	9	10	5	1	.....	.....	1	.....	.....	76	2	.....	3	.....	5	.....	.....	1	.....	.....	1	2	83
1920	41	.....	10	15	7	3	3	3	.....	1	.....	1	84	1	.....	2	1	4	.....	.....	.....	.....	.....	.....	.....	88
1921	24	.....	6	4	.....	15	1	2	1	.....	.....	4	57	4	.....	3	.....	7	.....	.....	.....	.....	.....	.....	.....	64

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Iowa:																													
1916	22	1	3			1							27	1	1			2			1		1		2	31
1917	27	2	4										33				1	1					1	1	2	36
1918	16		6			2		2				1	27		1	2		3						1	1	31
1919	11		3	1				2					17													17
1920	19	1	3										23	1				1						1	1	25
1921	16	1	1					1		1			20		2			2								22
Kansas:																													
1916	18	1		21		8		1			2		51	1		1		2	1						1	54
1917	17		1	3	2	1	1		2				27		1	1		2						1	1	30
1918	13		5		4	5	1						28			1		1			1	1		1	3	32
1919	14			1	2	1	2					1	21	1	1			2	1					1	2	25
1920	11		1	3	6	2							23	1	1			2			1				1	26
1921	7		1		4			1					13							1					1	14
Kentucky:																													
1916	35	1	14			4		5		1		1	61	1	1			2	8	1			2	1	12	75
1917	29	2	23	62	2	5		7				1	131						8		1	1		1	11	142
1918	33	2	13			9		5	1	3	2	1	69						5	1				2	8	77
1919	42	1	14		3	6		5		1			72						3	2			2	5	12	84
1920	68		20	2	2	6		6		3	7	1	115	1				1	1	1			2	3	7	123
1921	59	4	24	1	2	11	2	10	1	1		2	117						3	1			2	1	7	124
Maryland:																													
1916	11	2			16	2							31											1	1	32
1917	15		4										19			1		1		1					1	21
1918	8	2	5			2							17													17
1919	3		1			1							5													5
1920	7												7													7
1921	6		1										7													7
Michigan:																													
1916	1					1							2													2
1917						1							1	1				1						2	2	4
1918	6		2			1							9	1				1	1	1					2	12
1919	2		1										3													3
1920	3		1					1					5											1	1	6
1921	1		1										2		1			1								3
Missouri:																													
1916	6												6													6
1917	9					1		1					11													11
1918	8		1	1								1	11	1		1		2								13
1919	5	1		1		1	1						9			1		1								10
1920	6		2			1							9				1	1						1	1	11
1921	10	1				1							12													12
Montana:																													
1916	8	2	6										16													16
1917	7	2	9	1		1							20		1			1			1			1	2	23
1918	7	4	2					1					14								2		1		3	17
1919	2	2	3	1									8	1		1		2	1						1	11
1920	6	1	4			1		1		1			14													14
1921	7	1	1			1		2					12											1	1	13

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TABLE 27.—*United States: Coal-mine fatalities during the years* **1916** *to* **1921,** *by causes and States*—Continued.

State.	Underground.													Shaft.					Surface.							Grand total.
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	
	1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16		17	18	19	20	21	22		
New Mexico:																										
1916	12	2	3	.....	.....	2	.....	.....	.....	.....	.....	.....	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19
1917	11	.....	2	.....	.....	1	.....	1	.....	.....	.....	.....	15	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	16
1918	21	2	2	.....	1	.....	1	2	.....	.....	.....	.....	29	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	2	31
1919	14	1	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	4	5	25
1920	10	7	4	.....	5	1	.....	3	.....	.....	.....	1	31	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	2	33
1921	8	.....	3	.....	.....	.....	.....	1	1	.....	.....	.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13
North Dakota:																										
1916	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
1917	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	3
1918	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0
1919	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	4
1920	1	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
1921	1	.....	1	1	.....	1	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
Ohio:																										
1916	69	.....	23	1	.....	5	.....	5	.....	1	.....	.....	104	.....	.....	1	.....	1	1	.....	.....	.....	2	.....	3	108
1917	47	17	25	2	.....	4	.....	3	.....	1	.....	1	100	1	.....	3	.....	4	.....	.....	1	.....	1	2	4	108
1918	89	10	22	.....	.....	8	2	2	.....	1	.....	2	136	.....	.....	.....	.....	.....	1	.....	1	.....	4	7	13	149
1919	76	1	19	2	.....	10	.....	3	.....	1	20	1	133	.....	1	1	.....	2	3	.....	.....	.....	2	2	7	142
1920	79	1	25	3	.....	10	3	2	.....	4	.....	2	129	1	.....	.....	.....	1	1	.....	.....	.....	2	3	6	136
1921	74	.....	20	.....	.....	3	.....	2	.....	1	.....	1	101	.....	.....	.....	.....	.....	1	1	.....	.....	2	3	7	108
Oklahoma:																										
1916	13	.....	3	2	3	1	.....	2	.....	1	.....	.....	25	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	26
1917	10	.....	10	4	5	3	.....	2	.....	.....	.....	1	35	.....	1	.....	.....	1	.....	.....	1	.....	.....	.....	1	37
1918	13	.....	1	6	1	4	1	3	.....	.....	.....	.....	29	1	.....	.....	.....	1	.....	.....	1	.....	.....	.....	1	31
1919	11	.....	5	16	1	.....	.....	3	.....	.....	.....	.....	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
1920	7	1	4	17	3	2	.....	6	.....	.....	.....	.....	40	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	41
1921	9	1	4	1	.....	.....	.....	1	.....	1	1	.....	18	1	.....	.....	.....	1	.....	.....	.....	.....	.....	1	1	20

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Oregon:																								
1916				3								3												3
1917																								0
1918																								0
1919																								0
1920																								0
1921																								0
Pennsylvania (bituminous):																								
1916	195	28	89	36		10	1	23	2	6		9	399	9		2		11	15		1	1	6	23	433
1917 (revised)	228	36	128	21		6		16	2	5		7	449	1	3	4		8	13		4	3	8	10	38	495
1918	256	18	112	8		6	2	18	1	7	3	5	436	6	1	5		12	14	3	3	3	7	13	43	491
1919	188	36	79	10		17		12		9	2	9	362	3	1	2	4	10	9	2	5		4	7	27	399
1920	207	27	79	22		22	1	9		10		7	384	2	6	1		9	7	3	2	3	7	12	34	427
1921	118	38	50	2		15		12		8	2	13	258						2	3	2	1	4	10	22	280
South Dakota:																								
1916																								0
1917																								0
1918																								0
1919																								0
1920																								0
1921																								0
Tennessee:																								
1916	9		2					3	1				15											15
1917	12		2	1	11			1					27								1			1	28
1918	10		3					1					14												14
1919	18		8			1							27												27
1920	13	3	4	1									21												21
1921	4	2	3			1		1				1	12												12
Texas:																								
1916														1		1		2							2
1917						1							1												1
1918	1										4		5			2		2							7
1919																2	1	3							3
1920	3					1							4			1		1							5
1921														1				1					1	1	2
Utah:																								
1916	13		5			1						1	20						2	1				3	23
1917	8		5	1		1		1				1	17						1	1			1	2	5	22
1918	9		4			1						1	15							1			2	1	4	19
1919	14	1	4	1		1				3			24						1				1	1	3	27
1920	11	8	9				1			1			30						1	3				1	5	35
1921	4	1	5					1		2			13							1			1		2	15
Virginia:																								
1916	36	1	9			1		3		1			51						1					1	2	53
1917	37	1	14	1		2		3	1				59						1				2	1	4	63
1918	28		8	1		3		1					41						1					1	2	43
1919	7	4	13			1		2		1		4	32			1		1						1	1	34
1920	5	6	8	3	1							2	25								1				1	26
1921	13		1					3					17													17

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TABLE 27.—*United States: Coal-mine fatalities during the years* **1916** *to* **1921,** *by causes and States*—Continued.

State.	Underground.													Shaft.					Surface.								Grand total.
	Falls of roof (coal, rock, etc.).	Falls of face or pillar coal.	Mine cars and locomotives.	Gas explosions and burning gas.	Coal-dust explosions (including gas and dust combined).	Explosives.	Suffocation from mine gases.	Electricity.	Animals.	Mining machines.	Mine fires (burned, suffocated, etc.).	Other causes.	Total.	Falling down shafts or slopes.	Objects falling down shafts or slopes.	Cage, skip, or bucket.	Other causes.	Total.	Mine cars and mine locomotives.	Electricity.	Machinery.	Boiler explosions or bursting steam pipes.	Railway cars and locomotives.	Other causes.	Total.	
	1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16		17	18	19	20	21	22		
Washington:																											
1916	5	2	2	2	.....	4	....	2	....	.....	.....	1	**18**	1	.....	.....	.....	**1**	.....	.....	.....	.....	.....	2	**2**	**21**
1917	3	3	3	.....	.....	.....	1	2	....	.....	.....	15	**27**	.....	.....	.....	.....	**...**	2	1	.....	.....	.....	.....	**3**	**30**
1918	9	3	3	1	12	.....	....	1	....	.....	.....	1	**30**	1	.....	.....	.....	**1**	1	.....	1	.....	.....	.....	**2**	**33**
1919	3	.....	2	1	.....	1	....	1	....	.....	.....	6	**14**	.....	.....	.....	.....	**...**	2	.....	2	.....	.....	1	**5**	**19**
1920	7	1	5	.....	.....	.....	....	.....	....	.....	.....	3	**16**	.....	.....	.....	.....	**...**	1	1	.....	.....	.....	.....	**2**	**18**
1921	2	1	2	.....	.....	.....	....	.....	....	.....	.....	1	**6**	.....	.....	.....	.....	**...**	.....	.....	.....	.....	.....	1	**1**	**7**
West Virginia:																											
1916	201	15	74	27	1	3	1	15	....	8	....	2	**347**	.....	.....	1	....	**1**	9	4	2	.....	3	6	**24**	**372**
1917	190	5	81	19	.....	6	....	12	....	9	2	1	**325**	1	1	2	....	**4**	20	9	5	.....	4	17	**55**	**384**
1918	197	19	111	1	4	14	....	17	1	6	13	1	**384**	...	1	1	....	**2**	33	4	...	...	...	14	**51**	**437**
1919	171	17	63	15	.....	6	....	12	....	9	....	2	**295**	...	1	2	....	**3**	20	3	1	1	2	7	**34**	**332**
1920	166	15	66	3	5	12	....	12	....	11	....	.....	**290**	1	1	.....	....	**2**	15	6	.....	.....	6	5	**32**	**324**
1921	176	5	71	4	.....	14	....	12	....	3	....	4	**289**	1	2	.....	....	**3**	9	4	1	.....	2	12	**28**	**320**
Wyoming:																											
1916	14	2	5	.....	.....	2	....	3	1	2	.....	.....	**29**	.....	.....	.....	.....	**...**	.....	.....	.....	.....	1	.....	**1**	**30**
1917	22	5	6	.....	.....	1	....	1	....	1	.....	.....	**36**	.....	.....	.....	.....	**...**	.....	.....	.....	.....	.....	1	**1**	**37**
1918	21	5	8	1	.....	1	1	2	....	.....	.....	.....	**39**	.....	.....	.....	.....	**...**	.....	.....	.....	.....	.....	2	**2**	**41**
1919	19	3	4	3	1	2	....	.....	....	.....	.....	1	**33**	.....	.....	.....	.....	**...**	.....	.....	.....	.....	.....	.....	**...**	**33**
1920	16	5	10	.....	.....	.....	....	2	....	2	.....	.....	**35**	.....	.....	1	....	**1**	1	1	.....	.....	.....	11	**13**	**49**
1921	18	1	5	.....	.....	1	....	2	1	.....	.....	.....	**28**	.....	.....	.....	.....	**...**	.....	.....	.....	.....	1	.....	**1**	**29**
Total (bituminous):																											
1916	782	68	326	127	56	60	2	81	4	20	3	24	**1,553**	20	2	10	2	**34**	38	6	6	3	10	21	**84**	**1,671**
1917	858	107	424	156	163	55	2	76	9	18	2	38	**1,908**	11	8	21	4	**44**	51	13	21	7	26	44	**162**	**2,114**
1918	968	84	440	69	34	85	10	77	6	17	25	24	**1,839**	14	8	16	3	**41**	58	10	10	5	21	45	**149**	**2,029**
1919	774	97	308	102	47	57	5	65	1	26	22	27	**1,531**	13	4	18	5	**40**	42	8	11	2	15	33	**111**	**1,682**
1920	842	93	342	94	34	79	8	70	....	36	8	20	**1,626**	16	8	8	2	**34**	32	15	5	3	21	44	**120**	**1,780**
1921	716	62	268	34	17	84	6	76	4	17	9	30	**1,323**	11	6	8	....	**25**	16	13	4	1	16	30	**80**	**1,428**

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Pennsylvania (anthracite):																													
1916	180	35	64	43	.....	86	10	9	4	.....	.....	43	**474**	11	.....	2	**15**	21	1	16	1	6	21	**66**	**555**
1916	190	66	64	41	.....	55	6	3	.....	1	.....	32	**467**	10	4	1	**16**	23	4	25	1	10	36	**99**	**582**
1917 (revised)	214	28	66	26	.....	50	5	11	2	.....	1	39	**442**	7	1	1	**11**	29	5	30	2	10	22	**98**	**551**
1918	172	57	73	42	.....	149	6	4	1	.....	.....	42	**546**	7	2	3	**13**	29	2	11	4	7	23	**76**	**635**
1919	162	35	66	36	.....	49	10	6	4	1	.....	25	**394**	11	.....	11	**22**	22	2	20	1	3	27	**75**	**491**
1920	203	38	70	62	.....	68	3	4	3	1	.....	43	**497**	7	3	1	**11**	8	4	12	.....	4	9	**37**	**545**
1921					.....	2																							
United States:																													
1916	962	103	390	170	56	146	12	90	8	20	3	67	**2,027**	31	2	12	4	**49**	59	7	22	4	16	42	**150**	**2,226**
1916	1,057	173	488	197	163	110	8	79	9	19	2	70	**2,375**	21	4	22	5	**60**	74	17	46	8	36	80	**261**	**2,696**
1917 (revised)	1,182	112	506	95	34	135	15	88	8	17	26	63	**2,281**	21	1	17	5	**53**	58	15	40	7	31	67	**247**	**2,580**
1918	946	154	381	144	47	206	11	69	2	26	22	69	**2,077**	20	2	21	6	**53**	87	10	22	6	22	56	**187**	**2,317**
1919	1,004	128	408	130	34	128	18	76	4	37	8	45	**2,020**	27	1	6	2	**56**	71	17	25	4	24	71	**195**	**2,271**
1920	919	100	338	96	19	152	9	80	7	18	9	73	**1,820**	18	2	9	.....	**36**	24	17	16	1	20	39	**117**	**1,973**
1921																													

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TABLE 28.—*Percentage of coal mined by various methods, by States and years.*[a]

State and year.	Percentage coal mined by—			
	Hand.	Machine.	Shot off solid.	Not reported.[b]
Alabama:				
1916	31.3	32.1	36.2	0.4
1917	26.6	30.1	42.0	1.3
1918	22.1	31.0	44.3	2.6
1919	17.8	33.1	46.9	2.2
Alaska:				
1916	.....	.....	.....	.....
1917	.....	.....	.....	.....
1918	.....	.....	.....	.....
1919	.....	.....	.....	.....
Arkansas:				
1916	6.7	11.2	81.6	.5
1917	7.2	7.2	84.8	.8
1918	6.3	10.9	77.6	5.2
1919	3.8	7.9	86.6	1.7
California, Idaho, and Nevada:				
1916	.....	.....	.....	.....
1917	.....	.....	.....	.....
1918	.....	.....	.....	.....
1919	.....	.....	.....	.....
Colorado:				
1916	51.4	31.9	16.1	.6
1917	59.0	32.7	7.6	.7
1918	54.0	36.9	7.3	1.8
1919	49.0	40.3	9.9	.8
Georgia and North Carolina:				
1916	3.5	.....	96.5	.....
1917	1.4	.....	98.6	.....
1918	2.6	.....	97.4	.....
1919	.....	.....	100.0	.....
Illinois:				
1916	11.0	61.7	26.2	1.1
1917	9.9	56.3	32.8	1.0
1918	9.5	56.6	33.1	.8
1919	7.4	59.0	32.5	1.1
Indiana:				
1916	9.1	56.6	29.4	4.9
1917	8.1	54.1	32.5	5.3
1918	11.5	49.0	34.3	5.2
1919	7.9	51.7	35.3	5.1
Iowa:				
1916	17.0	8.8	73.0	1.2
1917	21.8	11.4	65.9	.9
1918	27.9	10.7	58.5	2.9
1919	20.4	11.7	65.9	2.0
Kansas:				
1916	8.5	.6	78.0	12.9
1917	21.1	.5	66.8	11.6
1918	6.2	.7	77.4	15.7
1919	2.8	1.0	84.7	11.5
Kentucky:				
1916	6.0	84.4	9.0	.6
1917	5.2	83.6	10.8	.4
1918	4.3	78.5	15.1	2.1
1919	4.1	79.8	15.1	1.0
Maryland:				
1916	89.3	5.0	5.1	0.6
1917	73.9	6.1	18.6	1.4
1918	72.6	6.7	17.5	3.2
1919	75.7	10.3	13.3	.7
Michigan:				
1916	2.2	88.5	9.1	.2
1917	3.4	87.3	9.2	.1
1918	.9	86.8	9.7	2.6
1919	1.3	94.7	4.0	.....
Missouri:				
1916	19.4	20.0	34.6	26.0
1917	19.4	19.9	36.7	24.0
1918	16.5	22.0	36.2	25.3
1919	15.4	22.3	34.4	27.9
Montana:				
1916	34.1	55.7	9.5	.7
1917	35.4	49.0	14.3	1.3
1918	21.2	50.0	28.2	.6
1919	11.7	44.2	42.4	1.7
New Mexico:				
1916	81.7	13.5	4.5	.3
1917	68.2	26.3	5.2	.3
1918	59.8	30.7	9.0	.5
1919	65.0	30.5	4.1	.4
North Dakota:				
1916	6.3	34.4	43.8	15.5
1917	6.2	38.0	42.9	12.9
1918	4.7	47.9	35.2	12.2
1919	6.1	38.6	38.8	16.5
Ohio:				
1916	3.7	91.1	2.1	3.1
1917	4.0	87.9	3.3	4.8
1918	3.2	84.8	3.7	8.3
1919	3.8	87.1	2.6	6.5
Oklahoma:				
1916	1.4	34.8	60.6	3.2
1917	.5	36.6	59.0	3.9
1918	3.9	39.5	52.3	4.3
1919	.8	47.3	47.3	4.6
Oregon:				
1916	.....	.....	.....	.....
1917	.....	.....	.....	.....
1918	.....	.....	.....	.....
1919	.....	.....	.....	.....
Pennsylvania, bituminous:				
1916	35.0	55.4	9.3	.3
1917	36.8	55.4	7.2	.6
1918	35.7	55.0	6.9	2.4
1919	38.0	57.3	3.6	1.1
South Dakota:				
1916	.....	.....	.....	.....
1917	.....	.....	.....	.....
1918	.....	.....	.....	.....
1919	.....	.....	.....	.....
Tennessee:				
1916	33.9	24.7	41.1	.3
1917	32.7	22.6	41.5	.2
1918	26.8	22.7	48.1	2.4
1919	24.8	30.6	44.2	.4
Texas:				
1916	78.0	1.0	21.0	.....
1917	79.6	.1	20.3	.....
1918	76.0	.1	21.5	2.4
1919	77.0	.6	22.4	.....
Utah:				
1916	41.7	57.5	.8	.....
1917	37.7	54.8	7.4	.1
1918	36.7	53.9	9.2	.2
1919	24.3	68.8	6.8	.1
Virginia:				
1916	4.4	61.9	33.7	.....
1917	3.7	63.9	32.3	.1
1918	14.9	62.2	19.7	3.2
1919	13.8	67.7	18.4	.1

[a] Compiled from Mineral Resources, U. S. Geol. Survey.
[b] Includes coal mined from steam-shovel pits.

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TABLE 28.—*Percentage of coal mined by various methods, by States and years*—Contd.

State and year.	Percentage coal mined by—				State and year.	Percentage coal mined by—			
	Hand.	Machine.	Shot off solid.	Not reported.		Hand.	Machine.	Shot off solid.	Not reported.
Washington:					Total (bituminous):				
1916	58.2	9.1	32.7	.....	1916	26.8	56.4	15.5	1.3
1917	59.7	5.8	34.5	.....	1917	25.6	55.5	17.3	1.6
1918	57.8	6.1	36.1	.....	1918	23.8	55.9	17.5	2.8
1919	64.8	9.1	26.1	.....	1919	23.6	39.2	15.3	1.9
West Virginia:					Pennsylvania, anthracite:				
1916	36.5	62.9	.5	.1	1916	.....	2.1	.....	2.3
1917	33.5	64.8	1.5	.2	1917	.....	2.0	.....	2.3
1918	29.0	67.5	2.8	.7	1918	.....	1.9	.....	2.4
1919	26.5	70.3	3.0	.2	1919	.....	.....	.....	.....
Wyoming:					United States:				
1916	22.8	44.0	33.1	.1	1916	26.8	56.4	15.5	1.3
1917	16.0	41.9	42.0	.1	1917	.....	47.3	.....	1.7
1918	21.6	47.3	29.7	1.4	1918	.....	48.0	.....	2.8
1919	17.4	55.2	27.3	.1	1919	.....	.....	.....	.....

DATA ESSENTIAL TO DETERMINE TRUE ACCIDENT RATES.

The lack of complete and comparable statistics regarding accidents at coal mines has been evident for many years to those who have had occasion to examine existing records.

Perhaps the simplest explanation of this want of essential data is that so many factors are concerned in the frequency of accidents that many of the factors have been overlooked or perhaps omitted because of the great volume of work that their presentation would involve. It has therefore become customary to indicate the hazards of mining by presenting figures showing the number of accidents in proportion to the quantity of coal produced or the actual number of men employed. Accident rates based on these two factors alone are likely to prove misleading.

It is of course impossible to represent adequately by figures the real hazards of mining. Any statistical portrayal is by itself incomplete. But it is entirely feasible to present in a single publication considerable pertinent data often omitted from statistical publications relating to mine accidents. Prominent among these are the average number of days the mines were active and the number of shifts worked by the employees. These two factors are required in order to calculate accident rates based on a uniform number of working days; that is, a standard period of exposure to occupational hazards. When such uniform rates are obtained they may be more intelligently interpreted if we know how the daily output of the individual worker varies in different years or in different States. Again, the average daily production of coal per man is affected largely by the extent to which mining machines are used.

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In view of the foregoing, it is manifest that any statistical report on mine accidents is complete or incomplete to the degree to which such collateral figures are included or omitted.

In Tables 31 to 45, covering the period 1916 to 1919, effort has been made to place in compact and convenient form such basic and pertinent data as are available. For this purpose the writer acknowledges his indebtedness to the United States Geological Survey, whose reports have been freely drawn upon for data as to production, number of employees, days active, etc. Reference to such tables is essential to the proper interpretation of the accident rates herein presented.

FATALITY RATES ON A 2,000-HOUR BASIS.

Table 29, showing the number of men killed per thousand, 2,000-hour workers, is based upon reports of the United States Geological Survey showing the number of coal-mine employees who worked 8, 9, or 10 hours a day.

Any rates purporting to indicate the relative frequency of accidents at mines in different States or in different years should, as previously stated, be calculated on the basis of a uniform working time. It is a common practice, although obviously incorrect, to compare the fatality rate for one State where all employees work, say, an average of 300 days each during a given year, with the rate for another State where the employees (because of labor or market troubles or for other reasons) average, perhaps, 150 days during the same year. It is likewise incorrect (although perhaps necessary) to make comparisons between the accident rates of two States when in one all mines are operated on an 8-hour basis, while in the other a longer day is still in vogue.

The actual number of hours during which mine employees in the United States are exposed to the hazards of their occupation is, unfortunately, not available. Therefore in Tables 29 the rates are based upon the number of hours the mines were in operation and the employees were presumably at liberty to work rather than the number of hours the men actually worked. The rates presented are perhaps as nearly uniform and comparable as any that can be obtained for the country as a whole in view of the state of existing records.

In connection with these tables attention is called to Table 36, wherein the accident rates are given on a basis of 300 days to the working year regardless of the number of hours constituting a day's work. Accident rates on a 300-day basis make it possible to compare fatal accidents at coal mines with similar accidents at metal mines, quarries, and in other branches of the mineral industry. (See Tables 44 and 45.) Allowance must be made, however, for variations in the length of the working day in different States or in different years.

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NUMBER OF 8, 9, AND 10 HOUR EMPLOYEES IN COAL MINES.

Table 30 shows the number of 8, 9, or 10 hour employees in the coal mines of the United States for the years 1916 to 1919. Later figures are not available. The figures in this table form the basis of the fatality rates presented in Table 29.

TABLE 29.—*Men employed, hours worked, and fatality rates at coal mines during the years ended Dec. 31,* ***1916*** *to* ***1918.***[a]

1916.

State.	Men employed.	Average days worked.	Total hours worked (all employees).		Number of 2,000-hour workers.	Fatalities.	
			Per day.	Per year.		Total.	Per 1000-2000-hour workers.
	1	2	3	4	5	6	7
Alabama	25,308	262	247,842	64,934,604	32,467	119	3.67
Alaska	83	179	747	133,713	67	0	.....
Arkansas	3,772	184	30,320	5,578,880	2,789	7	2.51
California, Idaho, and Nevada	18	188	162	30,456	15	0	.....
Colorado	13,104	233	105,396	24,557,268	12,279	43	3.50
Georgia and North Carolina	411	280	3,699	1,035,720	518	1	1.93
Illinois	75,538	198	605,143	119,818,314	59,909	128	2.14
Indiana	23,965	187	192,859	36,064,633	18,032	51	2.83
Iowa	14,443	202	116,429	23,518,658	11,759	31	2.64
Kansas	12,132	204	97,666	19,923,864	9,962	54	5.42
Kentucky	31,222	208	291,867	60,708,336	30,354	75	2.47
Maryland	5,633	256	56,084	14,357,504	7,179	32	4.46
Michigan	2,535	216	20,280	4,380,480	2,190	2	.91
Missouri	9,654	207	77,638	16,071,066	8,036	6	.75
Montana	3,781	244	30,253	7,381,732	3,691	16	4.33
New Mexico	4,522	292	37,810	11,040,520	5,520	19	3.44
North Dakota	714	244	6,893	1,681,892	841	1	1.19
Ohio	41,394	197	332,524	65,507,228	32,754	108	3.30
Oklahoma	7,800	178	62,760	11,171,280	5,586	26	4.65
Oregon	106	236	895	211,220	106	3	28.30
Pennsylvania (bituminous)	168,212	259	1,466,582	379,844,738	189,922	433	2.28
South Dakota	38	145	342	49,590	25	0	.....
Tennessee	9,211	239	86,044	20,564,516	10,282	15	1.46
Texas	4,481	218	38,916	8,483,688	4,242	2	.47
Utah	3,129	228	25,110	5,725,080	2,863	23	8.03
Virginia	9,777	272	97,482	26,515,104	13,258	53	4.00
Washington	4,797	217	38,380	8,328,460	4,164	21	5.04
West Virginia	78,067	237	734,532	174,084,084	87,042	372	4.27
Wyoming	7,255	248	58,413	14,486,424	7,243	30	4.14
Total (bituminous) [b]	**561,102**	**230**	**4,863,068**	**1,117,387,840**	**558,694**	**1,671**	**2.99**
Pennsylvania (anthracite)	159,869	253	1,318,919	333,686,507	166,843	555	3.33
Total, 1916 [b]	**720,971**	**235**	**6,181,987**	**1,452,788,095**	**726,394**	**2,226**	**3.06**

1917.

Alabama	28,386	273	272,654	74,434,542	37,217	108	2.90
Alaska	.....	.....	.....	.....	.....	.....	.....
Arkansas	3,998	187	32,349	6,049,263	3,025	17	5.62
California, Idaho, and Nevada	17	173	153	26,469	13	.....	.....
Colorado	14,231	263	115,841	30,466,183	15,233	188	12.34
Georgia and North Carolina	281	269	2,529	680,301	340	1	2.94
Illinois	84,090	243	674,375	163,873,125	81,937	233	2.84
Indiana	26,528	221	214,458	47,395,218	23,698	76	3.21
Iowa	14,266	251	115,066	28,881,566	14,441	36	2.49
Kansas	10,680	216	85,976	18,570,816	9,285	30	3.23
Kentucky	34,926	214	301,429	64,505,806	32,253	142	4.40
Maryland	5,919	254	48,864	12,411,456	6,206	21	3.38
Michigan	2,406	254	19,279	4,896,866	2,448	4	1.63
Missouri	9,668	240	77,896	18,695,040	9,348	11	1.18

[a] Compiled (except for fatalities) from Mineral Resources, U. S. Geological Survey.
[b] Totals in columns 4 and 5 obtained by calculating averages for United States, and not by adding corresponding figures for each State.

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TABLE 29.—*Men employed, hours worked, and fatality rates at coal mines during the years ended Dec. 31,* ***1916*** *to* ***1918***—Continued.[a]

1917—Continued.

State.	Men employed.	Average days worked.	Total hours worked (all employees).		Number of 2,000-hour workers.	Fatalities.	
			Per day.	Per year.		Total.	Per 1000-2000-hour workers.
	1	2	3	4	5	6	7
Montana	4,149	268	33,236	8,907,248	4,454	23	5.16
New Mexico	4,126	321	34,517	11,079,957	5,540	16	2.89
North Dakota	821	255	7,600	1,938,000	969	3	3.10
Ohio	45,509	210	366,639	76,994,190	38,497	108	2.81
Oklahoma	8,495	211	68,621	14,479,031	7,240	37	5.11
Oregon	104	251	866	217,366	109	.....	.....
Pennsylvania (bituminous)	173,968	261	1,447,023	377,673,003	188,837	495	2.62
South Dakota	34	154	306	47,124	24	.....	.....
Tennessee	10,421	241	92,698	22,340,218	11,170	28	2.51
Texas	4,375	263	38,108	10,022,404	5,011	1	.20
Utah	3,485	219	27,948	6,120,612	3,060	22	7.19
Virginia	11,168	273	103,188	28,170,324	14,085	63	4.47
Washington	5,312	271	42,723	11,577,933	5,789	30	5.18
West Virginia	88,422	225	761,725	171,388,125	85,694	384	4.48
Wyoming	7,358	246	58,882	14,484,972	7,242	37	5.11
Total (bituminous) [b]	**603,143**	**243**	**5,044,949**	**1,225,922,607**	**612,961**	**2,114**	**3.45**
Pennsylvania (anthracite)	154,174	285	1,233,392	351,516,720	175,758	582	3.31
Total, 1917 [b]	**757,317**	**251**	**6,278,341**	**1,575,863,591**	**787,932**	**2,696**	**3.42**

1918.

Alabama	26,221	278	212,732	59,139,496	29,570	110	3.72
Alaska	239	254	2,151	546,354	273	.....	.....
Arkansas	3,978	204	32,399	6,609,396	3,305	13	3.93
California, Idaho, and Nevada	15	240	135	32,400	16	.....	.....
Colorado	14,483	255	116,608	29,735,040	14,868	71	4.78
Georgia and North Carolina	240	212	2,160	457,920	229	2	8.73
Illinois	85,965	238	688,365	163,830,870	81,915	238	2.91
Indiana	30,376	227	244,772	55,563,244	27,782	100	3.60
Iowa	13,328	245	107,710	26,388,950	13,194	31	2.35
Kansas	10,665	234	86,313	20,197,242	10,099	32	3.17
Kentucky	39,342	230	331,840	76,323,200	38,162	77	2.02
Maryland	5,568	261	44,778	11,687,058	5,844	17	2.91
Michigan	2,558	237	20,496	4,857,552	2,429	12	4.94
Missouri	9,590	235	77,656	18,249,160	9,125	13	1.42
Montana	4,559	264	36,569	9,654,216	4,827	17	3.52
New Mexico	4,095	301	32,832	9,882,432	4,941	31	6.27
North Dakota	828	229	7,130	1,632,770	816	.....	.....
Ohio	48,450	223	390,511	87,083,953	43,542	149	3.42
Oklahoma	8,451	228	68,292	15,570,576	7,785	31	3.98
Oregon	40	292	330	96,360	48	.....	.....
Pennsylvania (bituminous)	174,306	269	1,421,366	382,347,454	191,174	491	2.57
South Dakota	21	145	189	27,405	14	.....	.....
Tennessee	10,694	265	88,715	23,509,475	11,755	14	1.19
Texas	3,936	262	33,927	8,888,874	4,444	7	1.58
Utah	4,160	258	33,329	8,598,882	4,299	19	4.42
Virginia	11,004	277	90,634	25,105,618	12,553	43	3.43
Washington	5,109	275	40,911	11,250,525	5,625	33	5.87
West Virginia	89,530	238	750,373	178,588,774	89,294	437	4.89
Wyoming	7,554	268	60,792	16,292,256	8,146	41	5.03
Total (bituminous) [b]	**615,305**	**249**	**5,024,015**	**1,250,979,735**	**625,490**	**2,029**	**3.24**
Pennsylvania (anthracite)	147,121	293	1,176,968	344,851,624	172,426	551	3.20
Total, 1918 [b]	**762,426**	**258**	**6,200,983**	**1,599,853,614**	**799,927**	**2,580**	**3.23**

[a] Compiled (except for fatalities) from Mineral Resources, U. S. Geological Survey.
[b] Totals in columns 4 and 5 obtained by calculating averages for United States, and not by adding corresponding figures for each State.

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TABLE 30.—*Number of hours to the working day, in and about the coal mines in the United States, by States, for the years* ***1916*** *to* ***1919.***

[Compiled from Mineral Resources, U. S. Geological Survey.]

Year.	8-hour day.		9-hour day.		10-hour day.		Men employed other than 8, 9, or 10 hours per day.	Total number of men employed.
	Number of mines.	Men employed.	Number of mines.	Men employed.	Number of mines.	Men employed.		
Alabama:								
1916	9	306	40	2,724	132	20,376	1,902	25,308
1917	38	3,586	27	1,900	143	20,766	2,134	28,386
1918	235	24,129	3	72	8	872	1,148	26,221
1919	268	24,054	1	5	3	562	2,253	26,874
Alaska:								
1916							83	83
1917 [a]								
1918							239	239
1919	4	138					28	166
Arkansas:								
1916	60	3,628					144	3,772
1917	68	3,636	1	5	1	3	354	3,998
1918	74	3,416	1	8	1	13	541	3,978
1919	91	3,782	1	30			2	3,814
California, Idaho, and Nevada:								
1916							18	18
1917							17	17
1918							15	15
1919	2	69					8	77
Colorado:								
1916	159	12,542			1	2	560	13,104
1917	130	12,238					1,993	14,231
1918	169	13,741	1	99	1	2	641	14,483
1919	157	10,224	6	[b] 1,187	2	15	403	11,829
Georgia and North Carolina:								
1916							411	411
1917							281	281
1918							240	240
1919	2	217						217
Illinois:								
1916	437	74,702	8	56	1	3	777	75,538
1917	402	82,435	4	50			1,605	84,090
1918	454	85,320	3	33			612	85,965
1919	486	83,882	7	48			1,090	85,020
Indiana:								
1916	184	22,932	2	39	6	106	888	23,965
1917	181	24,294	2	42			2,192	26,528
1918	255	28,612	1	15			1,749	30,376
1919	303	29,721	3	9			257	29,987
Iowa:								
1916	160	13,574	3	22	1	16	831	14,443
1917	130	13,328	1	11			927	14,266
1918	125	12,242	1	12			1,074	13,328
1919	175	11,700	1	6			660	12,366
Kansas:								
1916	131	11,522					610	12,132
1917	120	10,144					536	10,680
1918	141	9,672					993	10,665
1919	174	9,803	1	7			116	9,926
Kentucky:								
1916	62	5,486	87	6,736	183	16,355	2,645	31,222
1917	217	16,738	84	5,488	69	3,833	8,867	34,926
1918	376	26,601	93	5,271	55	4,363	3,107	39,342
1919	585	36,807	75	5,849	34	1,062	1,880	45,598
Maryland:								
1916	1	3	10	205	58	5,390	35	5,633
1917	61	4,766	1	25	5	359	769	5,919
1918	85	5,334					234	5,568
1919	85	5,127					267	5,394
Michigan:								
1916	16	2,535						2,535
1917	19	2,375					31	2,406
1918	21	2,526					32	2,558
1919	14	2,104						2,104
Missouri:								
1916	158	9,340	1	6	4	92	216	9,654
1917	130	9,141	1	10	1	25	492	9,668
1918	149	8,685	5	99	2	31	775	9,590
1919	193	8,831	8	176	2	44	263	9,314

[a] Included in California and Idaho.

[b] Includes outside employees working 9 hours or 10 hours a day at certain mines where the established time for underground work is 8 hours.

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TABLE 30.—*Number of hours to the working day, in and about the coal mines in the United States, by States, for the years* ***1916*** *to* ***1919***.—Continued.

Year.	8-hour day.		9-hour day.		10-hour day.		Men employed other than 8, 9, or 10 hours per day.	Total number of men employed.
	Number of mines.	Men employed.	Number of mines.	Men employed.	Number of mines.	Men employed.		
Montana:								
1916	41	3,776	.....	.....	.....	.....	5	3,781
1917	34	4,105	.....	.....	.....	.....	44	4,149
1918	44	4,470	.....	.....	2	8	81	4,559
1919	61	4,050	.....	.....	3	11	62	4,123
New Mexico:								
1916	24	2,890	2	48	1	2	1,582	4,522
1917	26	2,617	.....	.....	.....	.....	1,509	4,126
1918	32	4,023	1	34	.....	.....	38	4,095
1919	38	3,560	1	165	.....	.....	20	3,745
North Dakota:								
1916	17	87	5	41	17	554	32	714
1917	10	109	2	30	15	320	362	821
1918	16	464	1	15	9	142	207	828
1919	62	927	12	14	10	52	79	1,072
Ohio:								
1916	521	40,052	20	327	4	30	985	41,394
1917	489	43,423	7	82	9	481	1,523	45,509
1918	635	46,184	9	242	15	645	1,379	48,450
1919	816	47,980	12	382	9	116	1,146	49,624
Oklahoma:								
1916	95	7,521	.....	.....	3	81	198	7,800
1917	98	7,890	.....	.....	2	56	549	8,495
1918	109	7,777	2	109	1	10	555	8,451
1919	118	8,087	3	22	1	27	312	8,448
Oregon:								
1916	4	59	.....	.....	.....	.....	47	106
1917	5	70	.....	.....	.....	.....	34	104
1918	1	30	.....	.....	.....	.....	10	40
1919	2	57	.....	.....	.....	.....	10	67
Pennsylvania, bituminous:								
1916	828	84,794	338	38,436	299	37,468	7,514	168,212
1917	1,293	124,824	230	27,293	79	6,135	15,716	173,968
1918	1,698	151,586	146	7,439	52	4,198	11,083	174,306
1919	2,325	160,490	136	6,138	37	2,400	5,522	174,550
South Dakota:								
1916	.....	.....	.....	.....	.....	.....	.....	38
1917	.....	.....	.....	.....	.....	.....	34	34
1918	.....	.....	.....	.....	.....	.....	21	21
1919	2	5	1	4	2	6	31	46
Tennessee:								
1916	2	51	60	5,110	24	3,196	854	9,211
1917	51	2,630	59	5,748	8	1,539	504	10,421
1918	109	8,380	5	422	2	849	1,043	10,694
1919	142	10,002	3	316	2	665	549	11,523
Texas:								
1916	22	2,566	13	762	12	1,153	.....	4,481
1917	13	2,213	16	930	12	946	286	4,375
1918	16	2,074	15	855	6	577	430	3,936
1919	17	2,273	22	1,115	6	148	108	3,644
Utah:								
1916	20	3,051	1	3	.....	.....	75	3,129
1917	20	3,417	1	6	.....	.....	62	3,485
1918	26	4,111	1	5	.....	.....	44	4,160
1919	30	3,809	2	9	.....	.....	39	3,857
Virginia:								
1916	3	47	8	107	56	9,536	87	9,777
1917	27	1,484	17	1,141	39	4,160	4,383	11,168
1918	84	8,916	16	1,034	8	514	540	11,004
1919	104	10,966	11	288	9	232	100	11,586
Washington:								
1916	44	4,793	.....	.....	.....	.....	4	4,797
1917	47	5,085	.....	.....	.....	.....	227	5,312
1918	51	5,070	.....	.....	.....	.....	39	5,109
1919	45	5,022	.....	.....	.....	.....	14	5,036
West Virginia:								
1916	35	2,994	426	38,997	371	34,923	1,153	78,067
1917	601	41,199	244	25,552	99	7,126	14,545	88,422
1918	915	58,782	263	23,540	54	3,385	3,823	89,530
1919	1,232	85,815	46	5,353	10	787	2,750	94,705
Wyoming:								
1916	48	6,882	.....	.....	.....	.....	373	7,255
1917	52	7,349	.....	.....	1	9	.....	7,358
1918	51	7,194	.....	.....	.....	.....	360	7,554
1919	69	7,276	.....	.....	.....	.....	10	7,286

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TABLE 30.—*Number of hours to the working day in and about the coal mines in the United States, by States, for the years* ***1916*** *to* ***1919***—Continued.

Year.	8-hour day.		9-hour day.		10-hour day.		Men employed other than 8, 9, or 10 hours per day.	Total number of men employed.
	Number of mines.	Men employed.	Number of mines.	Men employed.	Number of mines.	Men employed.		
Total bituminous:								
1916	3,081	316,133	1,024	93,619	1,173	129,283	22,067	561,102
1917	4,262	429,096	697	68,313	483	45,758	59,976	603,143
1918	5,871	529,339	567	39,304	216	15,609	31,053	615,305
1919	7,602	576,778	342	21,123	130	6,127	17,970	621,998
Pennsylvania, anthracite: [a]								
1916	.....	159,869	.....	.....	.....	.....	.....	159,869
1917	.....	154,174	.....	.....	.....	.....	.....	154,174
1918	.....	147,121	.....	.....	.....	.....	.....	147,121
1919	.....	154,571	.....	.....	.....	.....	.....	154,571
Total, United States:								
1916	.....	476,002	.....	93,619	.....	129,283	22,067	720,971
1917	.....	583,270	.....	68,313	.....	45,758	59,976	757,317
1918	.....	676,460	.....	39,304	.....	15,609	31,053	762,426
1919	.....	731,349	.....	21,123	.....	6,127	17,970	776,569

[a] Employees not segregated. Prior to May, 1916, operations were not conducted on basis of a 9-hour day. Since then the 8-hour day is standard. Number of mines not given.

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TABLE 31.—*United States: Production of coal (net tons), and average days worked per employee, during the years ended Dec. 31,* ***1916*** *to* ***1921.***

State	Production.						Average days worked.			
	1916	1917	1918	1919	1920[a]	1921[a]	1916	1917	1918	1919
Alabama	18,086,197	20,068,074	19,184,962	15,536,721	16,700,000	12,200,000	262	273	278	239
Alaska	13,073	53,955	75,606	60,674	61,000	78,000	179	(b)	254	280
Arkansas	1,994,915	2,143,579	2,227,369	1,429,020	2,310,000	1,400,000	184	187	204	136
California, Idaho, and Nevada	7,240	6,423	6,400	6,554	9,000	5,000	188	173	240	59
Colorado	10,484,237	12,483,336	12,407,571	10,323,420	12,100,000	9,130,000	233	263	255	225
Georgia and North Carolina	173,554	119,028	68,136	60,326	79,000	45,000	280	269	212	242
Illinois	66,195,336	86,199,387	89,291,105	60,862,608	90,050,000	67,500,000	198	243	238	160
Indiana	20,093,528	26,539,329	30,678,634	20,912,288	30,420,000	19,000,000	187	221	227	148
Iowa	7,260,800	8,965,830	8,192,195	5,624,692	9,170,000	5,000,000	202	251	245	176
Kansas	6,881,455	7,184,975	7,561,947	5,224,724	6,700,000	3,000,000	204	216	234	182
Kentucky	25,393,997	27,807,971	31,612,617	30,036,061	31,000,000	30,000,000	208	214	230	189
Maryland	4,460,046	4,745,924	4,497,297	3,021,686	4,050,000	2,500,000	256	254	261	179
Michigan	1,180,360	1,374,805	1,464,818	996,545	1,440,000	1,150,000	216	254	237	179
Missouri	4,742,146	5,670,549	5,667,730	3,979,798	5,750,000	3,700,000	207	240	235	175
Montana	3,632,527	4,226,689	4,532,505	3,236,369	4,440,000	3,100,000	244	268	264	194
New Mexico	3,793,011	4,000,527	4,023,239	3,138,756	3,750,000	2,300,000	292	321	301	273
North Dakota	634,912	790,548	719,733	840,959	770,000	800,000	244	255	229	216
Ohio	34,728,219	40,748,734	45,812,943	35,876,682	45,000,000	32,000,000	197	210	223	164
Oklahoma	3,608,011	4,386,844	4,813,447	3,802,113	4,200,000	3,300,000	178	211	228	184
Oregon	42,592	28,327	13,328	18,739	25,000	14,000	236	251	292	259
Pennsylvania (bituminous)	170,295,424	172,448,142	178,550,741	150,758,154	163,000,000	112,000,000	259	261	269	218
South Dakota	8,886	8,042	7,942	14,417	19,000	11,000	145	154	145	164
Tennessee	6,137,449	6,194,221	6,831,048	5,213,205	6,750,000	4,400,000	239	241	265	201
Texas	1,987,503	2,355,815	2,261,135	1,680,656	1,800,000	1,050,000	218	263	262	227
Utah	3,567,428	4,125,230	5,136,825	4,631,323	5,870,000	4,000,000	228	219	259	239
Virginia	9,707,474	10,087,091	10,289,808	9,326,830	9,850,000	7,800,000	272	273	277	247
Washington	3,038,588	4,009,902	4,082,212	2,990,447	3,750,000	2,267,000	217	271	275	217
West Virginia	86,460,127	86,441,667	89,935,839	79,036,553	87,500,000	71,200,000	237	225	238	200
Wyoming	7,910,647	8,575,619	9,438,688	7,219,738	10,000,000	7,450,000	248	246	268	221
Total (bituminous)	**502,519,682**	**551,790,563**	**579,385,820**	**465,860,058**	**556,563,000**	**407,000,000**	**230**	**243**	**249**	**195**
Pennsylvania (anthracite)	87,578,493	99,611,811	98,826,084	88,092,201	89,100,000	87,500,000	253	285	293	266
Total	**590,098,175**	**651,402,374**	**678,211,904**	**553,952,259**	**645,663,000**	**494,500,000**	**235**	**251**	**258**	**209**

[a] Estimated.

[b] Not available.

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TABLE 32.—*United States: Average number of men employed during the years ended Dec. 31,* ***1916*** *to* ***1919.***

State.	Underground.				Surface.				Total.			
	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919
Alabama	21,453	22,925	20,584	20,660	3,855	5,461	5,637	6,214	25,308	28,386	26,221	26,874
Alaska	69	(a)	170	103	14	(a)	69	63	83	(a)	239	166
Arkansas	3,055	3,135	3,107	3,096	717	863	871	718	3,772	3,998	3,978	3,814
California, Idaho, and Nevada	11	11	10	54	7	6	5	23	18	17	15	77
Colorado	10,456	11,285	11,320	8,931	2,648	2,946	3,163	2,898	13,104	14,231	14,483	11,829
Georgia and North Carolina	322	205	170	145	89	76	70	72	411	281	240	217
Illinois	68,127	75,085	75,270	75,013	7,411	9,005	10,695	10,007	75,538	84,090	85,965	85,020
Indiana	20,992	22,664	23,979	25,316	2,973	3,864	6,397	4,671	23,965	26,528	30,376	29,987
Iowa	12,960	12,672	11,774	10,873	1,483	1,594	1,554	1,493	14,443	14,266	13,328	12,366
Kansas	10,325	8,816	8,652	8,173	1,807	1,864	2,013	1,753	12,132	10,680	10,665	9,926
Kentucky	26,501	28,162	30,323	35,530	4,721	6,764	9,019	10,068	31,222	34,926	39,342	45,598
Maryland	4,719	4,696	4,377	4,422	914	1,223	1,191	972	5,633	5,919	5,568	5,394
Michigan	2,124	2,154	2,207	1,851	411	252	351	253	2,535	2,406	2,558	2,104
Missouri	7,877	7,680	7,644	7,235	1,777	1,988	1,946	2,079	9,654	9,668	9,590	9,314
Montana	3,065	3,338	3,347	3,318	716	811	1,212	805	3,781	4,149	4,559	4,123
New Mexico	3,304	3,191	2,971	2,918	1,218	935	1,124	827	4,522	4,126	4,095	3,745
North Dakota	553	619	602	758	161	202	226	314	714	821	828	1,072
Ohio	36,680	38,569	39,883	41,336	4,714	6,940	8,567	8,288	41,394	45,509	48,450	49,624
Oklahoma	6,620	7,017	7,057	6,996	1,180	1,478	1,394	1,452	7,800	8,495	8,451	8,448
Oregon	78	77	25	52	28	27	15	15	106	104	40	67
Pennsylvania (bituminous)	139,186	143,687	140,502	143,838	29,026	30,281	33,804	30,712	168,212	173,968	174,306	174,550
South Dakota	26	34	21	43	12	.....	.....	3	38	34	21	46
Tennessee	7,661	8,053	8,198	8,976	1,550	2,368	2,496	2,547	9,211	10,421	10,694	11,523
Texas	3,901	3,683	3,391	3,018	580	692	545	626	4,481	4,375	3,936	3,644
Utah	2,397	2,569	3,065	2,709	732	916	1,095	1,148	3,129	3,485	4,160	3,857
Virginia	7,359	8,607	8,788	9,471	2,418	2,561	2,216	2,115	9,777	11,168	11,004	11,586
Washington	3,764	4,072	3,836	3,801	1,033	1,240	1,273	1,235	4,797	5,312	5,109	5,036
West Virginia	64,618	69,155	69,047	74,350	13,449	19,267	20,483	20,355	78,067	88,422	89,530	94,705
Wyoming	6,041	6,024	5,932	5,815	1,214	1,334	1,622	1,471	7,255	7,358	7,554	7,286
Total (bituminous)	**474,244**	**498,185**	**496,252**	**508,801**	**86,858**	**104,958**	**119,053**	**113,197**	**561,102**	**603,143**	**615,305**	**621,998**
Pennsylvania (anthracite)	116,705	109,989	101,671	107,829	43,164	44,185	45,450	46,742	159,869	154,174	147,121	154,571
Total	**590,949**	**608,174**	**597,923**	**616,630**	**130,022**	**149,143**	**164,503**	**159,939**	**720,971**	**757,317**	**762,426**	**776,569**

a Not available.

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TABLE 33.—*United States: Number of 300-day workers employed during the years ended Dec. 31,* **1916** *to* **1919.**

State.	Underground.				Surface.				Total.			
	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919
Alabama	18,746	20,839	19,092	16,436	3,369	4,964	5,229	4,944	22,115	25,803	24,321	21,380
Alaska	41	(a)	144	96	8	(a)	59	59	49	(a)	203	155
Arkansas	1,871	1,955	2,109	1,401	439	538	591	325	2,310	2,493	2,700	1,726
California, Idaho, and Nevada	7	6	8	11	4	4	4	4	11	10	12	15
Colorado	8,116	9,895	9,640	6,706	2,055	2,583	2,694	2,176	10,171	12,478	12,334	8,882
Georgia and North Carolina	300	184	120	117	83	68	50	58	383	252	170	175
Illinois	44,869	60,761	59,610	39,916	4,881	7,287	8,470	5,325	49,750	68,048	68,080	45,241
Indiana	13,055	16,689	18,165	12,486	1,849	2,845	4,846	2,304	14,904	19,534	23,011	14,790
Iowa	8,725	10,613	9,608	6,368	998	1,335	1,268	874	9,723	11,948	10,876	7,242
Kansas	7,022	6,341	6,736	4,960	1,229	1,341	1,567	1,064	8,251	7,682	8,303	6,024
Kentucky	18,391	20,086	23,220	22,357	3,276	4,824	6,906	6,335	21,667	24,910	30,126	28,692
Maryland	4,020	3,978	3,807	2,636	778	1,036	1,036	580	4,798	5,014	4,843	3,216
Michigan	1,527	1,825	1,744	1,102	296	213	277	150	1,823	2,038	2,021	1,252
Missouri	5,437	6,138	5,977	4,227	1,227	1,589	1,522	1,215	6,664	7,727	7,499	5,442
Montana	2,489	2,977	2,942	2,149	582	724	1,065	521	3,071	3,701	4,007	2,670
New Mexico	3,216	3,418	2,982	2,655	1,186	1,002	1,128	753	4,402	4,420	4,110	3,408
North Dakota	450	527	459	545	131	172	172	226	581	699	631	771
Ohio	24,056	27,052	29,606	22,551	3,092	4,868	6,359	4,521	27,148	31,920	35,965	27,072
Oklahoma	3,938	4,943	5,369	4,297	702	1,041	1,061	892	4,640	5,984	6,430	5,189
Oregon	61	64	24	45	22	23	15	13	83	87	39	58
Pennsylvania (bituminous)	120,256	125,154	126,144	104,308	25,078	26,375	30,349	22,272	145,334	151,529	156,493	126,580
South Dakota	12	17	10	23	6	.....	.....	2	18	17	10	25
Tennessee	6,098	6,466	7,240	6,018	1,234	1,901	2,205	1,708	7,332	8,367	9,445	7,726
Texas	2,840	3,229	2,957	2,282	422	607	475	473	3,262	3,836	3,432	2,755
Utah	1,822	1,877	2,649	2,162	557	669	947	916	2,379	2,546	3,596	3,078
Virginia	6,675	7,824	8,108	7,796	2,193	2,328	2,045	1,741	8,868	10,152	10,153	9,537
Washington	2,721	3,680	3,510	2,753	747	1,121	1,165	895	3,468	4,801	4,675	3,648
West Virginia	51,036	51,850	54,700	49,605	10,622	14,446	16,227	13,581	61,658	66,296	70,927	63,186
Wyoming	4,991	4,945	5,301	4,281	1,003	1,095	1,449	1,083	5,994	6,040	6,750	5,364
Total (bituminous)	**364,163**	**403,353**	**412,258**	**331,539**	**66,696**	**84,979**	**98,902**	**73,760**	**430,859**	**488,332**	**511,160**	**405,299**
Pennsylvania (anthracite)	98,483	104,396	99,385	95,514	36,424	41,938	44,428	41,404	134,907	146,334	143,813	136,918
Total	**463,733**	**509,677**	**513,655**	**430,542**	**102,033**	**124,989**	**141,318**	**111,675**	**565,766**	**634,666**	**654,973**	**542,217**

(a) Not available.

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TABLE 34.—*United States: Number of shifts worked during the years ended Dec. 31,* ***1916*** *to* ***1919.***

State.	Underground.				Surface.				Total.			
	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919
Alabama	5,623,990	6,251,775	5,727,715	4,930,942	1,010,603	1,489,242	1,568,552	1,483,124	6,634,593	7,741,017	7,296,267	6,414,066
Alaska	12,368	(a)	43,245	28,870	2,510	(a)	17,553	17,658	14,878	(a)	60,798	46,528
Arkansas	561,276	586,506	632,784	420,292	131,729	161,453	177,391	97,469	693,005	747,959	810,175	517,761
California, Idaho, and Nevada	2,066	1,902	2,400	3,205	1,314	1,038	1,200	1,365	3,380	2,940	3,600	4,570
Colorado	2,434,719	2,968,579	2,892,159	2,011,770	616,595	774,960	808,118	652,791	3,051,314	3,743,539	3,700,277	2,664,561
Georgia and North Carolina	90,094	55,182	36,099	35,155	24,902	20,458	14,865	17,457	114,996	75,640	50,964	52,612
Illinois	13,460,614	18,228,152	17,882,923	11,974,914	1,464,273	2,186,117	2,540,957	1,597,470	14,924,887	20,414,269	20,423,880	13,572,384
Indiana	3,916,372	5,006,656	5,449,389	3,745,735	554,658	853,589	1,453,763	691,131	4,471,030	5,860,245	6,903,152	4,436,866
Iowa	2,617,492	3,183,793	2,882,247	1,910,381	299,517	400,486	380,416	262,309	2,917,009	3,584,279	3,262,663	2,172,690
Kansas	2,106,594	1,902,373	2,020,814	1,487,913	368,679	402,225	470,168	319,144	2,475,273	2,304,598	2,490,982	1,807,057
Kentucky	5,517,257	6,025,626	6,965,856	6,707,035	982,865	1,447,246	2,071,863	1,900,556	6,500,122	7,472,872	9,037,719	8,607,591
Maryland	1,205,918	1,193,406	1,142,237	790,945	233,568	310,803	310,806	173,857	1,439,486	1,504,209	1,453,043	964,802
Michigan	458,115	547,429	523,023	330,552	88,646	64,045	83,181	45,182	546,761	611,474	606,204	375,734
Missouri	1,631,287	1,841,422	1,793,095	1,268,267	368,007	476,661	456,485	364,436	1,999,294	2,318,083	2,249,580	1,632,703
Montana	746,832	893,168	882,575	644,588	174,463	217,004	319,593	156,391	921,295	1,110,172	1,202,168	800,979
New Mexico	964,857	1,025,544	894,554	796,560	355,689	300,497	338,431	225,758	1,320,546	1,326,041	1,232,985	1,022,318
North Dakota	135,003	158,100	137,660	163,604	39,305	51,593	51,680	67,773	174,308	209,693	189,340	231,377
Ohio	7,216,912	8,115,671	8,881,614	6,765,175	927,494	1,460,308	1,907,802	1,356,479	8,144,406	9,575,979	10,789,416	8,121,654
Oklahoma	1,181,454	1,482,779	1,610,722	1,289,207	210,591	312,319	318,174	267,581	1,392,045	1,795,098	1,928,896	1,556,788
Oregon	18,391	19,308	7,287	13,452	6,602	6,770	4,373	3,880	24,993	26,078	11,660	17,332
Pennsylvania (bituminous)	36,076,897	37,546,106	37,842,966	31,292,434	7,523,510	7,912,577	9,104,803	6,681,517	43,600,407	45,458,683	46,947,769	37,973,951
South Dakota	3,760	5,238	3,043	7,052	1,735	.....	.....	492	5,495	5,238	3,043	7,544
Tennessee	1,829,417	1,939,652	2,172,124	1,805,387	370,134	570,359	661,335	512,302	2,199,551	2,510,011	2,833,459	2,317,689
Texas	851,845	968,856	887,102	684,540	126,652	182,039	142,575	141,990	978,497	1,150,895	1,029,677	826,530
Utah	546,702	563,006	794,815	648,537	166,953	200,745	283,955	274,832	713,655	763,751	1,078,770	923,369
Virginia	2,002,403	2,347,262	2,432,569	2,338,905	657,945	698,423	613,402	522,316	2,660,348	3,045,685	3,045,971	2,861,221
Washington	816,350	1,104,039	1,053,041	825,913	224,040	336,201	349,458	268,345	1,040,390	1,440,240	1,402,499	1,094,258
West Virginia	15,310,854	15,555,002	16,409,989	14,881,544	3,186,660	4,333,726	4,868,072	4,074,147	18,497,514	19,888,728	21,278,061	18,955,691
Wyoming	1,497,379	1,483,494	1,590,201	1,284,242	300,913	328,516	434,811	324,862	1,798,292	1,812,010	2,025,012	1,609,104
Total (bituminous)	**109,248,814**	**121,005,863**	**123,677,284**	**99,461,615**	**20,008,956**	**25,493,563**	**29,670,746**	**22,128,115**	**129,257,770**	**146,499,426**	**153,348,030**	**121,589,730**
Pennsylvania (anthracite)	29,544,777	31,318,796	29,815,515	28,654,124	10,927,269	12,581,458	13,328,439	12,421,169	40,472,046	43,900,254	43,143,954	41,075,293
Total	**139,120,032**	**152,903,042**	**154,096,435**	**129,162,535**	**30,609,784**	**37,496,638**	**42,395,549**	**33,502,488**	**169,729,816**	**190,399,680**	**196,491,984**	**162,665,023**

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TABLE 35.—*United States: Number of men killed by accidents at coal mines during the years ended Dec. 31,* **1916** *to* **1921.**

State.	Underground.						Surface.						Total.					
	1916	1917	1918	1919	1920	1921	1916	1917	1918	1919	1920	1921	1916	1917	1918	1919	1920	1921
Alabama	116	100	107	88	72	78	3	8	3	5	4	2	119	108	110	93	76	80
Alaska																		0
Arkansas	7	17	13	9	8	17				1	1		7	17	13	10	9	17
California, Idaho, and Nevada																		0
Colorado	39	184	69	88	66	49	4	4	2	3	4	3	43	188	71	91	70	52
Georgia and North Carolina		1	1				1		1				1	1	2			0
Illinois	128	215	237	167	203	190		18	1	2	4	3	128	233	238	169	207	193
Indiana	49	75	95	81	88	64	2	1	5	2			51	76	100	83	88	64
Iowa	29	34	30	17	24	22	2	2	1		1		31	36	31	17	25	22
Kansas	53	29	29	23	25	13	1	1	3	2	1	1	54	30	32	25	26	14
Kentucky	63	131	69	72	116	117	12	11	8	12	7	7	75	142	77	84	123	124
Maryland	31	20	17	5	7	7	1	1					32	21	17	5	7	7
Michigan	2	2	10	3	5	3		2	2		1		2	4	12	3	6	3
Missouri	6	11	13	10	10	12					1		6	11	13	10	11	12
Montana	16	21	14	10	14	12		2	3	1		1	16	23	17	11	14	13
New Mexico	19	16	29	20	31	13			2	5	2		19	16	31	25	33	13
North Dakota	1	3		3	3	4				1			1	3		4	3	4
Ohio	105	104	136	135	130	101	3	4	13	7	6	7	108	108	149	142	136	108
Oklahoma	26	36	30	36	40	19		1	1		1	1	26	37	31	36	41	20
Oregon	3												3					0
Pennsylvania (bituminous)	410	457	448	372	393	258	23	38	43	27	34	22	433	495	491	399	427	280
South Dakota																		0
Tennessee	15	27	14	27	21	12		1					15	28	14	27	21	12
Texas	2	1	7	3	5	1						1	2	1	7	3	5	2
Utah	20	17	15	24	30	13	3	5	4	3	5	2	23	22	19	27	35	15
Virginia	51	59	41	33	25	17	2	4	2	1	1		53	63	43	34	26	17
Washington	19	27	31	14	16	6	2	3	2	5	2	1	21	30	33	19	18	7
West Virginia	348	329	386	298	292	292	24	55	51	34	32	28	372	384	437	332	324	320
Wyoming	29	36	39	33	36	28	1	1	2		13	1	30	37	41	33	49	29
Total (bituminous)	**1,587**	**1,952**	**1,880**	**1,571**	**1,660**	**1,348**	**84**	**162**	**149**	**111**	**120**	**80**	**1,671**	**2,114**	**2,029**	**1,682**	**1,780**	**1,428**
Pennsylvania (anthracite)	489	483	453	559	416	508	66	99	98	76	75	37	555	582	551	635	491	545
Total	**2,076**	**2,435**	**2,333**	**2,130**	**2,076**	**1,856**	**150**	**261**	**247**	**187**	**195**	**117**	**2,226**	**2,696**	**2,580**	**2,317**	**2,271**	**1,973**

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TABLE 36.—*United States: Number of men killed per 1,000 300-day workers employed during the years ended Dec. 31,* **1916** *to* **1919.**[a]

State.	Underground.				Surface.				Total.			
	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919
Alabama	6.19	4.80	5.61	5.35	0.89	1.61	0.57	1.01	5.38	4.19	4.52	4.35
Alaska												
Arkansas	3.74	8.70	6.16	6.42				3.08	3.03	6.82	4.81	5.79
California, Idaho, and Nevada												
Colorado	4.81	18.60	7.16	13.12	1.95	1.55	.74	1.38	4.23	15.07	5.76	10.25
Georgia and North Carolina		5.43	8.33		12.05		20.00		2.60	3.17	11.76	
Illinois	2.85	3.54	3.98	4.18		2.47	.12	.37	2.57	3.42	3.50	3.74
Indiana	3.75	4.49	5.23	6.49	1.08	.35	1.03	.87	3.42	3.89	4.35	5.61
Iowa	3.32	3.20	3.12	2.67	2.00	1.50	.79		3.19	3.01	2.85	2.35
Kansas	7.55	4.57	4.31	4.64	.81	.75	1.91	1.88	6.54	3.91	3.85	4.15
Kentucky	3.43	6.52	2.97	3.22	3.66	2.28	1.16	1.89	3.46	5.70	2.56	2.93
Maryland	7.71	5.03	4.47	1.90	1.29	.97			6.67	4.19	3.51	1.55
Michigan	1.31	1.10	5.73	2.72		9.39	7.22		1.10	1.96	5.94	2.40
Missouri	1.11	1.79	2.18	2.37					.90	1.42	1.73	1.84
Montana	6.43	7.05	4.76	4.65		2.76	2.82	1.92	5.21	6.21	4.24	4.12
New Mexico	5.91	4.68	9.73	7.53			1.77	6.64	4.32	3.62	7.54	7.34
North Dakota	2.22	5.69		5.50				4.42	1.72	4.29		5.19
Ohio	4.36	3.84	4.59	5.99	.97	.82	2.04	1.55	3.98	3.38	4.14	5.25
Oklahoma	6.60	7.28	5.59	8.38		.96	.94		5.60	6.18	4.82	6.94
Oregon	47.18								36.14			
Pennsylvania (bituminous)	3.41	3.65	3.55	3.57	.92	1.44	1.42	1.21	2.98	3.27	3.14	3.15
South Dakota												
Tennessee	2.46	4.18	1.93	4.49		.53			2.05	3.35	1.48	3.49
Texas	.70	.31	2.37	1.31					.61	.26	2.04	1.09
Utah	10.98	9.06	5.66	11.10	5.39	7.47	4.22	3.28	9.67	8.64	5.28	8.77
Virginia	7.64	7.54	5.06	4.23	.91	1.72	.98	.57	5.98	6.21	4.24	3.57
Washington	6.98	7.34	8.83	5.09	2.68	2.68	1.72	5.59	6.06	6.25	7.06	5.21
West Virginia	6.82	6.35	7.06	6.01	2.26	3.81	3.14	2.50	6.03	5.79	6.16	5.25
Wyoming	5.81	7.28	7.36	7.71	1.00	.91	1.38		5.01	6.13	6.07	6.15
Total (bituminous)	4.36	4.84	4.56	4.74	1.26	1.91	1.51	1.50	3.88	4.31	3.97	4.15
Pennsylvania (anthracite)	4.97	4.63	4.56	5.85	1.81	2.36	2.21	1.84	4.11	3.98	3.83	4.64
Total	4.48	4.78	4.54	4.95	1.47	2.09	5.98	1.67	3.93	4.25	3.94	4.27

[a] Rates underground based upon fatalities and employees underground; surface rates based upon fatalities and employees aboveground.

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TABLE 37.—*United States: Number of men killed per million tons of coal mined during the years ended Dec. 31,* ***1916*** *to* ***1919.***

State.	Underground.				Underground and surface combined.			
	1916	1917	1918	1919	1916	1917	1918	1919
Alabama	6.41	4.98	5.58	5.66	6.58	5.38	5.73	5.99
Alaska	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas	3.51	7.93	5.84	6.30	3.51	7.93	5.84	7.00
California, Idaho, and Nevada	.....	.....	.....	.....	.....	.....	.....	.....
Colorado	3.72	14.74	5.56	8.52	4.10	15.06	5.72	8.81
Georgia and North Carolina	.....	8.40	14.68	.....	5.76	8.40	29.35	.....
Illinois	1.93	2.49	2.65	2.74	1.93	2.70	2.67	2.78
Indiana	2.44	2.83	3.10	3.87	2.54	2.86	3.26	3.97
Iowa	3.99	3.79	3.66	3.02	4.27	4.02	3.78	3.02
Kansas	7.70	4.04	3.83	4.40	7.85	4.18	4.23	4.79
Kentucky	2.48	4.71	2.18	2.40	2.95	5.11	2.44	2.80
Maryland	6.95	4.21	3.78	1.65	7.17	4.42	3.78	1.65
Michigan	1.69	1.45	6.83	3.01	1.69	2.91	8.19	3.01
Missouri	1.27	1.94	2.29	2.51	1.27	1.94	2.29	2.51
Montana	4.40	4.97	3.09	3.09	4.40	5.44	3.75	3.40
New Mexico	5.01	4.00	7.21	6.37	5.01	4.00	7.71	7.96
North Dakota	1.58	3.79	.....	3.57	1.58	3.79	.....	4.76
Ohio	3.02	2.55	2.97	3.76	3.11	2.65	3.25	3.96
Oklahoma	7.21	8.21	6.23	9.47	7.21	8.43	6.44	9.47
Oregon	70.44	.....	.....	.....	70.44	.....	.....	.....
Pennsylvania (bituminous)	2.41	2.65	2.51	2.47	2.54	2.87	2.75	2.65
South Dakota	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee	2.44	4.36	2.05	5.18	2.44	4.52	2.05	5.18
Texas	1.01	.42	3.10	1.78	1.01	.42	3.10	1.78
Utah	5.61	4.12	2.92	5.18	6.45	5.33	3.70	5.83
Virginia	5.25	5.85	3.98	3.54	5.46	6.25	4.18	3.65
Washington	6.25	6.73	7.59	4.68	6.91	7.48	8.08	6.35
West Virginia	4.02	3.81	4.29	3.76	4.30	4.44	4.86	4.20
Wyoming	3.67	4.20	4.13	4.57	3.79	4.31	4.34	4.57
Total (bituminous)	**3.16**	**3.54**	**3.24**	**3.37**	**3.33**	**3.83**	**3.50**	**3.61**
Pennsylvania (anthracite)	5.58	4.85	4.58	6.35	6.34	5.84	5.58	7.21
Total	**3.52**	**3.74**	**3.44**	**3.85**	**3.77**	**4.14**	**3.80**	**4.18**

TABLE 38.—*United States: Production per death during the years ended Dec. 31,* ***1916*** *to* ***1919.***

State.	Underground.				Underground and surface combined.			
	1916	1917	1918	1919	1916	1917	1918	1919
Alabama	155,915	200,681	179,299	176,554	151,985	185,816	174,409	167,062
Alaska	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas	284,988	126,093	171,336	158,780	284,988	126,093	171,336	142,902
California, Idaho, and Nevada	.....	.....	.....	.....	.....	.....	.....	.....
Colorado	268,827	67,844	179,820	117,312	243,819	66,401	174,755	113,444
Georgia and North Carolina	.....	119,028	68,136	.....	173,554	119,028	34,068	.....
Illinois	517,151	400,927	376,756	364,447	517,151	369,954	375,173	360,134
Indiana	410,072	353,858	322,933	258,176	393,991	349,202	306,786	251,955
Iowa	250,372	263,701	273,073	330,864	234,219	249,051	264,264	330,864
Kansas	129,839	247,758	260,757	227,162	127,434	239,499	236,311	208,989
Kentucky	403,079	212,275	458,154	417,168	338,587	195,831	410,553	357,572
Maryland	143,872	237,296	264,547	604,337	139,376	225,996	264,547	604,337
Michigan	590,180	687,403	146,482	332,182	590,180	343,701	122,068	332,182
Missouri	790,358	514,504	435,979	397,980	790,358	514,504	435,979	397,980
Montana	227,033	201,271	323,750	323,637	227,033	183,769	266,618	294,215
New Mexico	199,632	250,033	138,732	156,938	199,632	250,033	129,782	125,550
North Dakota	634,912	263,516	.....	280,320	634,912	263,516	.....	210,240
Ohio	330,745	391,815	336,860	265,753	321,558	377,303	307,469	252,653
Oklahoma	138,770	121,857	160,448	105,614	138,770	118,563	155,272	105,614
Oregon	14,197	.....	.....	.....	14,197	.....	.....	.....
Pennsylvania (bituminous)	415,355	377,348	398,551	405,264	393,292	348,380	363,647	377,840
South Dakota	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee	409,163	229,416	487,932	193,082	409,163	221,222	487,932	193,082
Texas	993,752	2,355,815	323,019	560,219	993,752	2,355,815	323,019	560,219
Utah	178,371	242,661	342,455	192,972	155,106	187,510	270,360	171,530
Virginia	190,343	170,968	250,971	282,631	183,160	160,113	239,298	274,319
Washington	159,926	148,515	131,684	213,603	144,695	133,663	123,703	157,392
West Virginia	248,449	262,741	232,994	265,223	232,420	225,109	205,803	238,062
Wyoming	272,781	238,212	242,018	218,780	263,688	231,773	230,212	218,780
Total (bituminous)	**316,648**	**282,680**	**308,184**	**296,537**	**300,730**	**261,017**	**285,552**	**276,968**
Pennsylvania (anthracite)	179,097	206,236	218,159	157,589	157,799	171,154	179,358	138,728
Total	**284,248**	**267,516**	**290,703**	**260,071**	**265,094**	**241,618**	**262,873**	**239,082**

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TABLE 39.—*United States: Annual production of coal per man during the years ended Dec. 31, **1916** to **1919**.*

State.	By underground employees.				By all employees.			
	1916	1917	1918	1919	1916	1917	1918	1919
Alabama	843	875	932	752	715	707	732	578
Alaska				589				366
Arkansas	653	684	717	462	528	536	560	375
California, Idaho, and Nevada				121				85
Colorado	1,003	1,106	1,096	1,156	800	877	857	873
Georgia and North Carolina	539	581	401	416	422	424	284	278
Illinois	972	1,148	1,186	811	876	1,025	1,039	716
Indiana	957	1,171	1,279	826	838	1,000	1,010	687
Iowa	560	708	696	517	503	628	615	455
Kansas	666	815	874	639	567	673	709	526
Kentucky	958	987	1,043	845	813	796	804	659
Maryland	945	1,011	1,027	683	792	802	808	560
Michigan	556	638	664	538	466	571	573	474
Missouri	602	738	741	550	491	587	591	427
Montana	1,185	1,266	1,354	975	961	1,019	994	785
New Mexico	1,148	1,254	1,354	1,076	839	970	982	838
North Dakota	1,148	1,277	1,196	1,109	889	963	869	784
Ohio	947	1,057	1,149	868	839	895	946	723
Oklahoma	545	625	682	543	463	516	570	450
Oregon	546	368	533	360	401	272	333	280
Pennsylvania (bituminous)	1,224	1,200	1,271	1,048	1,012	991	1,024	864
South Dakota	342	237	378	335	234	237	378	313
Tennessee	801	769	833	581	666	594	639	452
Texas	509	640	667	557	444	538	574	461
Utah	1,488	1,606	1,676	1,710	1,140	1,184	1,235	1,201
Virginia	1,319	1,172	1,171	985	993	903	935	805
Washington	807	985	1,064	787	633	755	799	594
West Virginia	1,338	1,250	1,303	1,063	1,108	978	1,005	835
Wyoming	1,309	1,424	1,591	1,242	1,090	1,165	1,249	991
Total (bituminous)	**1,060**	**1,108**	**1,168**	**916**	**896**	**915**	**942**	**749**
Pennsylvania (anthracite)	750	906	972	817	548	646	672	570
Total	**999**	**1,071**	**1,134**	**898**	**818**	**860**	**890**	**713**

TABLE 40.—*United States: Daily production of coal per man during the years ended Dec. 31, **1916** to **1919**.*

State.	By underground employees.				By all employees.			
	1916	1917	1918	1919	1916	1917	1918	1919
Alabama	3.2	3.2	3.3	3.2	2.7	2.6	2.6	2.4
Alaska				2.1				1.3
Arkansas	3.6	3.7	3.5	3.4	2.9	2.9	2.8	2.8
California, Idaho, and Nevada				2.0				1.4
Colorado	4.3	4.2	4.3	5.1	3.4	3.3	3.4	3.9
Georgia and North Carolina	1.9	2.2	1.9	1.7	1.5	1.6	1.3	1.1
Illinois	4.9	4.7	5.0	5.1	4.4	4.2	4.4	4.5
Indiana	5.1	5.3	5.6	5.6	4.5	4.5	4.5	4.7
Iowa	2.8	2.8	2.8	2.9	2.5	2.5	2.5	2.6
Kansas	3.3	3.8	3.7	3.5	2.8	3.1	3.0	2.9
Kentucky	4.6	4.6	4.5	4.5	3.9	3.7	3.5	3.5
Maryland	3.7	4.0	3.9	3.8	3.1	3.2	3.1	3.1
Michigan	2.6	2.5	2.8	3.0	2.2	2.3	2.4	2.7
Missouri	2.9	3.1	3.2	3.1	2.4	2.4	2.5	2.4
Montana	4.9	4.7	5.1	5.0	3.9	3.8	3.8	4.0
New Mexico	3.9	3.9	4.5	3.9	2.9	3.0	3.3	3.1
North Dakota	4.7	5.0	5.2	5.1	3.6	3.8	3.8	3.6
Ohio	4.8	5.0	5.2	5.3	4.3	4.3	4.2	4.4
Oklahoma	3.1	3.0	3.0	2.9	2.6	2.5	2.5	2.4
Oregon	2.3	1.5	1.8	1.4	1.7	1.1	1.1	1.1
Pennsylvania (bituminous)	4.7	4.6	4.7	4.8	3.9	3.8	3.8	4.0
South Dakota	2.4	1.5	2.6	2.0	1.6	1.5	2.6	1.9
Tennessee	3.4	3.2	3.1	2.9	2.8	2.5	2.4	2.2
Texas	2.3	2.4	2.5	2.5	2.0	2.1	2.2	2.0
Utah	6.5	7.3	6.5	7.1	5.0	5.4	4.8	5.0
Virginia	4.8	4.3	4.2	4.0	3.7	3.3	3.4	3.3
Washington	3.7	3.6	3.9	3.6	2.9	2.8	2.9	2.7
West Virginia	5.6	5.6	5.5	5.3	4.7	4.4	4.2	4.2
Wyoming	5.3	5.8	5.9	5.6	4.4	4.7	4.7	4.5
Total (bituminous)	**4.6**	**4.6**	**4.7**	**4.7**	**3.9**	**3.8**	**3.8**	**3.8**
Pennsylvania (anthracite)	3.0	3.2	3.3	3.1	2.2	2.3	2.3	2.1
Total	**4.2**	**4.3**	**4.4**	**4.3**	**3.5**	**3.4**	**3.5**	**3.4**

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TABLE 41.—*United States: Average value of coal per ton at the mines during the years ended Dec. 31,* ***1916*** *to* ***1919.***

	1916	1917	1918	1919
Alabama	$1.37	$2.27	$2.85	$2.96
Alaska	4.00	4.92	5.45	5.66
Arkansas	1.92	2.56	3.67	3.70
California, Idaho, and Nevada	2.12	2.30	2.70	8.38
Colorado	1.62	2.22	2.69	2.78
Georgia and North Carolina	1.79	2.53	3.61	3.73
Illinois	1.25	1.88	2.32	2.30
Indiana	1.27	1.99	2.29	2.22
Iowa	1.86	2.35	3.02	3.09
Kansas	1.78	2.31	2.91	3.05
Kentucky	1.19	2.17	2.55	2.46
Maryland	1.56	2.46	2.77	2.73
Michigan	2.25	3.22	3.83	3.88
Missouri	1.91	2.43	3.02	3.21
Montana	1.73	2.11	2.53	2.67
New Mexico	1.47	1.86	2.68	3.11
North Dakota	1.49	1.80	2.26	2.50
Ohio	1.33	2.48	2.58	2.22
Oklahoma	2.09	2.81	3.64	3.83
Oregon	2.68	3.38	2.81	3.40
Pennsylvania (bituminous)	1.30	2.44	2.59	2.42
South Dakota	2.03	2.90	2.80	3.17
Tennessee	1.23	2.19	2.83	2.77
Texas	1.56	1.77	2.63	2.69
Utah	1.62	2.07	2.71	2.76
Virginia	1.06	2.00	2.51	2.55
Washington	2.27	2.68	3.46	3.58
West Virginia	1.18	2.32	2.56	2.49
Wyoming	1.55	1.93	2.39	2.60
Total (bituminous)	**1.32**	**2.26**	**2.58**	**2.49**
Pennsylvania (anthracite)	2.30	2.85	3.40	4.14
Total	**1.47**	**2.35**	**2.70**	**2.75**

TABLE 42.—*United States: Percentage of bituminous coal mined by machines during the years ended Dec. 31,* ***1916*** *to* ***1919.***

	1916	1917	1918	1919
Alabama	32.1	30.1	31.0	33.1
Alaska				
Arkansas	11.2	7.2	10.9	7.9
California, Idaho, and Nevada				
Colorado	31.9	32.7	36.9	40.3
Georgia and North Carolina				
Illinois	61.7	56.3	56.6	59.0
Indiana	56.6	54.1	49.0	51.7
Iowa	8.8	11.4	10.7	11.7
Kansas	.6	.5	.7	1.0
Kentucky	84.4	83.6	78.5	79.8
Maryland	5.0	6.1	6.7	10.3
Michigan	88.5	87.3	86.8	94.7
Missouri	20.0	19.9	22.0	22.3
Montana	55.7	49.0	50.0	44.2
New Mexico	13.5	26.3	30.7	30.5
North Dakota	34.4	38.0	47.9	38.6
Ohio	91.1	87.9	84.8	87.1
Oklahoma	34.8	36.6	39.5	47.3
Oregon				
Pennsylvania (bituminous)	55.4	55.4	55.0	57.3
South Dakota				
Tennessee	24.7	22.6	22.7	30.6
Texas	1.0	.1	.1	.6
Utah	57.5	54.8	53.9	68.8
Virginia	61.9	63.9	62.2	67.7
Washington	9.1	5.8	6.1	9.1
West Virginia	62.9	64.8	67.5	70.3
Wyoming	44.0	41.9	47.3	55.2
Total (bituminous)	**56.4**	**55.5**	**55.9**	**39.2**

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TABLE 43.—*United States: Data concerning strikes at coal mines during the years ended Dec. 31,* **1916** *to* **1919.**

	Number of men on strike.				Number of shifts lost.				Average days lost per man.			
	1916	1917	1918	1919	1916	1917	1918	1919	1916	1917	1918	1919
Alabama	300	1,835	1,952	13,431	920	10,220	3,259	269,242	3	6	2	20
Alaska												
Arkansas	1,009	2,417	1,207	3,681	30,847	27,315	4,292	161,069	31	11	4	44
California, Idaho, and Nevada												
Colorado	38	1,664	464	6,186	82	7,292	2,318	89,392	2	4	5	14
Georgia and North Carolina			230	168			1,610	2,016			7	12
Illinois	5,043	38,781	10,251	81,600	55,416	464,511	74,850	3,558,094	11	12	7	44
Indiana	8,154	11,914	8,083	28,431	154,974	74,695	51,015	1,135,013	19	6	6	40
Iowa	2,244	3,275	997	11,350	32,587	18,407	4,774	433,884	15	6	5	38
Kansas	6,306	7,312	4,675	9,104	152,838	128,514	25,047	531,791	24	18	5	58
Kentucky	4,830	9,348	1,226	22,598	269,859	425,725	15,318	696,165	56	46	12	31
Maryland	181	1,523	2,517	5,337	6,546	24,605	5,402	143,523	36	16	2	27
Michigan	1,416	163	1,367	2,087	18,189	1,964	18,194	153,351	13	12	13	73
Missouri	2,331	2,175	1,191	8,315	14,837	31,767	5,800	458,588	6	15	5	55
Montana	396	1,063	218	3,833	1,530	23,680	218	153,159	4	22	1	40
New Mexico		85		1,183		775		18,307		9		15
North Dakota	26	82	22	576	78	811	166	4,281	3	10	8	7
Ohio	7,594	7,710	4,993	42,724	156,689	56,875	44,837	1,717,426	21	7	9	40
Oklahoma	6,240	1,668	630	7,963	126,452	37,301	12,294	317,538	20	22	20	40
Oregon		25				25				1		
Pennsylvania (bituminous)	36,276	23,655	12,852	97,089	1,200,479	544,322	112,929	3,765,144	33	23	9	39
South Dakota												
Tennessee	350	4,448	835	10,199	3,784	192,730	2,454	334,315	11	43	3	33
Texas	2,218	75	55	1,747	62,905	260	550	52,858	28	3	10	30
Utah	181	212	30	317	543	848	30	4,866	3	4	1	15
Virginia		232	523	947		2,283	10,241	22,956		10	20	24
Washington	1,203	192	75	4,369	13,304	840	1,275	186,942	11	4	17	43
West Virginia	4,540	6,166	5,712	48,062	86,352	111,479	42,009	1,158,094	19	18	7	24
Wyoming	276				308				1			
Total (bituminous)	**91,152**	**126,020**	**60,105**	**411,297**	**2,389,519**	**2,187,244**	**438,882**	**15,368,014**	**26**	**17**	**7**	**37**
Pennsylvania (anthracite)	79,481	34,220	19,290	35,139	955,067	161,155	69,644	235,553	12	5	4	7
Total	**170,633**	**160,240**	**79,395**	**446,436**	**3,344,586**	**2,348,399**	**508,526**	**15,603,567**	**20**	**15**	**6**	**35**

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TABLE 44.—*United States: Number of men killed per 1,000 300-day workers employed in mineral industries during the years ended Dec. 31,* **1911** *to* **1920.**

	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
Coal mine	4.97	4.46	4.70	4.66	4.44	3.93	4.25	3.94	4.27	(a)
All metal mines	4.45	4.09	3.72	3.92	3.89	3.62	4.44	3.57	3.43	3.16
Copper mines	5.18	4.53	4.08	3.85	3.72	3.64	5.88	3.45	3.54	3.43
Gold and miscellaneous metal mines	4.28	4.32	3.83	4.06	4.79	4.05	4.03	4.27	4.41	4.20
Iron mines	4.64	3.96	3.29	3.78	2.88	3.41	3.54	3.45	3.00	2.34
Lead and zinc mines (Mississippi Valley)	4.03	4.28	3.90	4.32	5.37	3.14	4.09	3.58	4.13	3.27
Nonmetallic mineral mines	2.01	1.66	3.02	3.72	2.43	3.00	2.48	1.67	1.65	2.89
All quarries (including outside works)	2.23	2.27	2.10	2.64	1.80	2.26	1.83	2.11	1.93	2.31
Cement rock quarries	3.96	3.48	2.99	3.95	1.60	2.38	2.99	2.14	2.66	2.75
Granite quarries	1.92	1.87	1.47	3.36	2.27	1.86	1.54	2.10	1.81	2.06
Limestone quarries	2.21	2.19	2.13	2.38	1.70	2.36	1.79	1.79	1.97	2.58
Marble quarries	.71	2.48	1.81	2.72	1.00	1.16	.57	2.14	.51	.92
Sandstone and bluestone quarries	1.82	1.16	1.32	1.45	.93	1.28	.99	2.38	.76	.56
Slate quarries	2.60	2.62	3.05	2.99	2.02	2.62	1.31	3.16	1.78	1.49
Trap-rock quarries	1.77	3.08	2.40	2.49	3.46	4.45	2.61	4.47	2.56	2.61
All quarries (excluding outside works)	.....	.....	.....	.....	2.17	2.32	2.00	2.19	2.29	2.81
All quarries (outside works only)	.....	.....	.....	.....	1.05	2.15	1.53	1.98	1.35	1.59
Metallurgical plants:										
Ore-dressing plants	.....	.....	.99	1.51	1.57	1.41	1.93	1.55	1.50	1.31
Smelters	.....	.....	1.93	1.02	1.05	.73	1.05	.92	1.04	.69
Auxiliary works	.....	.....	.....	.....	.....	.89	.94	.85	.32	1.11
Coke ovens	.....	.....	1.97	2.12	1.21	1.32	2.14	2.06	1.92	1.64
Beehive coke ovens	.....	.....	.....	.....	.65	1.29	1.30	1.16	.92	1.09
By-product coke ovens	.....	.....	.....	.....	1.75	1.35	3.13	2.84	2.55	1.92

a Not available.

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TABLE 45.—*United States: Number of men injured per 1,000 300-day workers employed in mineral industries during the years ended Dec. 31,* ***1911*** *to* ***1920.***

	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
Coal mines [a]										
All metal mines	170.27	190.11	179.59	211.87	248.56	250.64	240.97	237.09	231.18	242.02
Copper mines	225.25	258.42	230.80	312.19	322.01	319.58	313.35	322.12	309.60	323.20
Gold and miscellaneous metal mines	80.33	93.04	70.37	126.90	201.49	190.79	172.51	185.18	191.29	204.82
Iron mines	252.30	241.81	268.31	224.07	233.51	240.17	227.54	185.45	196.19	200.49
Lead and zinc mines (Mississippi Valley)	139.40	158.29	133.51	189.01	238.27	263.09	272.99	319.54	292.28	327.97
Nonmetallic mineral mines	34.03	66.40	84.86	99.75	107.78	144.70	123.58	104.69	139.27	161.88
All quarries (including outside works)	63.85	69.82	88.81	114.92	117.30	175.62	185.14	147.07	144.20	145.51
Cement-rock quarries	136.52	139.59	207.99	226.20	148.25	248.83	277.73	238.65	231.58	182.49
Granite quarries	53.07	44.87	69.60	109.21	96.72	143.99	189.73	109.68	124.70	130.53
Limestone quarries	67.99	79.98	89.05	114.23	127.43	176.10	175.52	141.34	134.05	143.11
Marble quarries	43.39	42.35	68.67	121.31	93.80	125.20	100.20	58.02	75.26	91.98
Sandstone and bluestone quarries	34.68	45.26	74.36	69.08	66.56	127.86	118.89	148.04	131.96	100.56
Slate quarries	17.72	15.01	18.81	28.61	33.08	85.00	112.04	96.29	98.51	108.20
Trap-rock quarries	69.76	68.89	87.77	152.56	232.85	237.84	222.92	205.17	186.47	208.89
All quarries (excluding outside works)					127.57	158.63	162.95	148.29	146.65	139.62
All quarries (outside works only)					96.90	206.06	223.81	145.03	140.28	154.04
Metallurgical plants:										
Ore-dressing plants			122.38	94.19	109.65	135.66	121.12	139.54	122.82	164.24
Smelters			174.71	175.44	157.69	195.61	152.88	148.40	142.12	142.33
Auxiliary works						142.10	169.33	139.63	102.04	116.19
Coke ovens			107.73	103.06	90.78	153.49	188.59	219.64	145.66	114.13
Beehive coke ovens					39.84	100.37	94.43	131.11	125.96	102.54
By-product coke ovens					140.00	217.09	300.06	296.06	158.33	120.04

[a] Data covering injuries at coal mines not available.

RAILROAD FREIGHT TONNAGE FROM MINING INDUSTRY.

Table 46 has been prepared to show the magnitude of the mining industry as a contributor to the revenue-producing freight tonnage carried by American railways. Only freight originating on the roads is included, and the table refers exclusively to railroads of Class I; that is, those having an annual revenue of at least $1,000,000.

The figures show that mining products constitute about 56 per cent of the total tonnage from all sources. The railroads receive from mining nearly six times as much freight as from agriculture, nearly four times as much as from manufactures, and between six and seven times as much as from the products of forests. A large tonnage derived from mineral products is included in the figures shown under the heading of "manufactures."

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TABLE 46.—*United States: Revenue freight tonnage carried on Class I railroads,* ***1911*** *to* ***1919.***[a]

[Tonnage originating on roads.]

Commodity.	1911 [b]		1912 [b]		1913 [b]		1914 [b]		1915 [b]	
	Tons.	Per cent of total.	Tons.	Per cent of total.	Tons.	Per cent of total.	Tons.	Per cent of total.	Tons.	Per cent of total.
Products of agriculture	81,780,333	9.44	86,433,452	9.66	102,658,070	9.76	98,825,133	9.80	109,483,126	11.86
Animals and products	22,832,623	2.63	24,063,749	2.69	25,669,437	2.44	26,352,289	2.61	26,000,428	2.81
Products of mines	483,861,437	55.85	506,306,249	56.59	592,163,631	56.27	574,000,013	56.92	507,249,821	54.93
Products of forests	79,345,056	9.16	74,796,425	8.36	93,761,623	8.91	91,093,595	9.03	76,674,021	8.30
Manufactures	126,854,892	14.64	130,702,443	14.61	157,152,873	14.93	142,015,332	14.08	130,160,458	14.10
Miscellaneous	71,699,922	8.28	72,422,591	8.09	80,955,126	7.69	76,173,968	7.56	73,860,591	8.00
Total	**866,374,263**	**100.00**	**894,724,909**	**100.00**	**1,052,360,760**	**100.00**	**1,008,460,330**	**100.00**	**923,428,445**	**100.00**

Commodity.	1916 [b]		1916 [c]		1917 [c]		1918 [c]		1919 [c]	
	Tons.	Per cent of total.	Tons.	Per cent of total.	Tons.	Per cent of total.	Tons.	Per cent of total.	Tons.	Per cent of total.
Products of agriculture	112,460,531	9.78	113,635,399	9.45	104,629,258	8.28	116,050,505	9.19	115,033,319	10.49
Animals and products	29,155,548	2.54	30,473,161	2.53	31,858,146	2.52	35,776,736	2.83	35,493,662	3.24
Products of mines	649,660,256	56.50	680,122,775	56.58	732,652,519	57.96	734,796,460	58.16	589,950,958	53.82
Products of forests	89,139,376	7.75	93,819,387	7.81	100,838,196	7.98	97,256,399	7.70	94,075,639	8.58
Manufactures	179,411,874	15.60	188,787,138	15.71	193,031,168	15.27	180,406,440	14.28	168,759,153	15.40
Miscellaneous	90,014,712	7.83	95,162,207	7.92	101,006,438	7.99	99,057,453	7.84	92,798,540	8.47
Total	**1,149,842,297**	**100.00**	**1,202,000,067**	**100.00**	**1,264,015,725**	**100.00**	**1,263,343,993**	**100.00**	**1,096,111,271**	**100.00**

[a] Compiled from reports of the Interstate Commerce Commission.
[b] For year ended June 30.
[c] For year ended Dec. 31.

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STATE MINE INSPECTORS AND OTHER MINE OFFICIALS IN THE UNITED STATES JAN. 1, 1921.

Name.	Designation.	Address.
ALABAMA.		
Charles H. Nesbitt	Chief mine inspector	421–423 Chamber of Commerce, Birmingham.
E. E. Echols	Assistant mine inspector, District No. 1	Tuscaloosa.
George Park	Assistant mine inspector, District No. 2	Blossburg.
Jas. B. Carlin	Assistant mine inspector, District No. 3	Birmingham.
S. M. Thompson	Assistant mine inspector, District No. 4	Helena.
.....	Assistant mine inspector, District No. 5	.....
W. W. Kicker	Assistant mine inspector, District No. 6	Ensley.
ALASKA.		
B. W. Dyer	United States mine inspector	Fairbanks.
B. D. Stewart	Territorial mine inspector	Juneau.
ARIZONA.		
G. M. Butler	Director, State bureau of mines	Tucson.
J. F. White	State mine inspector	Phoenix.
E. F. Myers	Deputy mine inspector	Bisbee.
J. F. McManis	.....do.....	Globe.
Mathew Hall	.....do.....	Prescott.
ARKANSAS.		
James G. Ferguson	Commissioner of mines, manufactures, and agriculture.	Little Rock.
Jesse Redyard	State mine inspector	413–414 First National Bank Building, Fort Smith.
CALIFORNIA.		
Will J. French	Chairman industrial accident commission	525 Market Street, San Francisco.
W. P. Ratliff	Chief statistician	Do.
H. M. Wolflin	Superintendent of safety	Do.
G. Chester Brown	Chief mining engineer	Do.
J. Wesley Gebb	Mining engineer	Do.
F. L. Lowell	.....do.....	Do.
F. McN. Hamilton	State mineralogist	Ferry Building, San Francisco.
E. S. Boalich	Mining engineer, California State mining bureau.	Do.
COLORADO.		
Metal mines.		
Horace F. Lunt	Commissioner, bureau of mines, State of Colorado.	Denver.
Melvin J. Collins	Secretary	Do.
T. R. Henahen	Inspector, District No. 1	Do.
M. J. McCarthy	Inspector, District No. 2	Cripple Creek.
R. J. Murray	Inspector, District No. 3	Leadville.
Robert Innes	Inspector, District No. 4	Montrose.
Coal mines.		
James Dalrymple	Chief inspector of coal mines	State Capitol, Denver.
Henry King	Deputy inspector	Do.
James W. Graham	.....do.....	Lafayette.
W. H. James	.....do.....	Walsenberg.
W. M. Laurie	.....do.....	Trinidad.
Hugo H. Machin	.....do.....	Aguilar.
IDAHO.		
Stewart Campbell	State mine inspector, mining department	Boise.
ILLINOIS.		
Robt. M. Medill	Director, department of mines and minerals	Springfield.
Martin Bolt	Assistant director	1600 South College Street, Springfield.
William Hutton	Member State mining board	Duquoin.
Peter Joyce	.....do.....	Springfield.
M. S. Coleman	.....do.....	Harrisburg.
James Needham	.....do.....	Chicago.
William Hall	President miners' examining board	Springfield.
William Hogan	Member miners' examining board	Zeigler.
John Mulligan	Secretary miners' examining board	Decatur.
Joseph C. Viano	Member miners' examining board	Coal City.
Richard Neeson	Mine inspector	Illinois Hotel, Springfield.

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State mine inspectors and other mine officials in the United States Jan. 1, 1921—Contd.

Name.	Designation.	Address.
ILLINOIS—continued.		
Walter A. Waite	Mine inspector, District No. 1	422 East Erie Street, Springvalley.
William E. Kidd	Mine inspector, District No. 2	603 Columbia Terrace, Peoria.
Thomas P. Back	Mine inspector, District No. 3	321 West Locust Street, Canton.
Francis J. Devlin	Mine inspector, District No. 4	142 North Eleventh Street, Springfield.
Joseph Haskins	Mine inspector, District No. 5	Catlin.
John G. Millhouse	Mine inspector, District No. 6	Box 254, Litchfield.
Henry D. Thompson	Mine inspector, District No. 7	Collinsville.
Jas. R. Richards	Mine inspector, District No. 8	214 North Twelfth Street, Belleville.
Frank Rosbottom	Mine inspector, District No. 9	Duquoin.
John O'Rourke	Mine inspector, District No. 10	Mine-rescue station, Benton.
Thos. English	Mine inspector, District No. 11	Harrisburg.
W. L. Morgan	Mine inspector, District No. 12	Greenville.
James E. Anderson	Special mining investigator	538 East Fulton Street, Farmington.
INDIANA.		
Samuel R. Artman	Chairman industrial board of Indiana	Room 432, State Capitol, Indianapolis.
Cairy Littlejohn	Chief mine inspector	Room 413, State Capitol, Indianapolis.
John Ellison	Deputy mine inspector	Winslow.
Albert C. Dally	....do	Knightsville.
Samuel J. Wilton	....do	Carbon.
John Stevely	....do	Clinton.
Thos. Gillespie	....do	Bicknell.
IOWA.		
E. M. Gray	President Iowa State mining board	Des Moines.
B. H. Shivers	Secretary Iowa State mining board	Do.
W. E. Holland	Inspector, District No 1	Albia.
R. T Rhys	Inspector, District No. 2	Ottumwa.
Edward Sweeney	Inspector, District No. 3	Des Moines.
W. H. Wier	Secretary to mine inspectors	Do.
KANSAS.		
James Sherwood	Chief engineer of mining	Pittsburg.
William Glennon	Deputy State mine inspector	Do.
John Gilday	....do	Frontenac.
Peter H. White	....do	Daisy Hill.
Matt Dunn	....do	Burlingame.
P. E. Keegan	Statistical clerk	Pittsburg.
Elizabeth Kotzman	Stenographer	Frontenac.
Mine-rescue department.		
James Sherwood	Ex-officio superintendent rescue stations	Pittsburg.
George Farrimond	Superintendent central rescue station	Do.
William Hislop	Superintendent Arma rescue station	Arma.
D. M. Wilcox	Superintendent Scammon rescue station	Scammon.
KENTUCKY.		
L. Blenkinsopp	Chief inspector of mines	Lexington.
William Roberts	Assistant inspector of mines, District No. 1	Madisonville.
W. H. Hunt	Assistant inspector of mines, District No. 2	Central City.
Joseph A Lewis	Assistant inspector of mines, District No. 3	Lexington.
R. D. Collett	Assistant inspector of mines, District No. 4	Pineville.
Lacey Laxton	Assistant inspector of mines, District No. 5	Harlan.
H. C. Faulkner	Assistant inspector of mines, District No. 6	Hazard.
M. L. Wells	Assistant inspector of mines, District No. 7	Paintsville.
Grant Phillips	Assistant inspector of mines, District No. 8	Pikeville.
MARYLAND.		
Frank Powers	State mine inspector	Frostburg.
MICHIGAN.		
Carl Young	Commissioner, department of labor	Lansing.
Samuel B. Mullen	Chief clerk, department of labor	Do.
Perry J. Ward	Deputy commissioner, department of labor	Do.
John Harris	Coal-mine inspector	1212 Holland Avenue, Saginaw.
John C. Clemens	Mine inspector for Gogebic County	Bessemer.
Swan Olson	Deputy mine inspector for Gogebic County	Do.

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State mine inspectors and other mine officials in the United States Jan. 1, 1921—Contd.

Name.	Designation.	Address.
MICHIGAN—continued.		
Mat Salo	Deputy mine inspector for Gogebic County	Ironwood.
John Brickman	Mine inspector for Keweenaw County	Ahmeek.
Gust. Keikkala	Deputy mine inspector for Keweenaw County.	Mohawk.
Alfred James	Mine inspector for Houghton County	Laurium.
John Allaria	Deputy mine inspector for Houghton County.	Calumet.
Harry J. King	do	Laurium.
Michael Pakkala	do	Atlantic Mine.
Fred Mitchell	Mine inspector for Iron County	Iron River.
James H. Yelland	Mine inspector for Marquette County	Ishpeming.
Frank L. Larson	Mine inspector for Dickinson County	Iron Mountain.
Robert Eva, Sr	Mine inspector for Ontonagon County	Greenland.
John P. Christopher	Mine inspector for Baraga County	602 Pine Street, Marquette.
MINNESOTA.		
F. A. Duxbury	Chairman Minnesota industrial commission	St. Paul.
J. D. Williams	Commissioner Minnesota industrial commission.	Do.
Henry McColl	do	Do.
Frank C. Hoffman	Chief statistician of labor and industries	Do.
Ed. Smith	Mine inspector for St. Louis County	Eveleth.
W. J. Trescott	Mine inspector for Itasca County	Coleraine.
August Swanson	Mine inspector for Crow Wing County	Brainerd.
F. A. Wildes	Superintendent of State mines	1748 Hague Avenue, St. Paul.
MISSOURI.		
John E. Roberts	Chief mine inspector	Kirksville.
W. H. Crouch	Secretary State bureau of mines	Bethany.
F. G. Fenix	Deputy inspector	Joplin.
W. H. Castle	do	Fulton.
MONTANA.		
Jerome G. Locke	Chairman State industrial accident board	Helena.
George N. Griffin	State coal-mine inspector	Do.
William Maxwell	State metal-mine inspector	Do.
NEVADA.		
George D. Smith	Chairman Nevada industrial commission	Carson City.
A. J. Stinson	State mine inspector	Do.
Charles Huber	Deputy mine inspector	Tonopah.
Alex. Baird	do	Ely.
NEW JERSEY.		
John Roach	Chief, bureau of mines, department of labor	Statehouse, Trenton.
Augustus Munson	State mine inspector	P. O. box 311, Dover.
NEW MEXICO.		
W. W. Risdon	State inspector of mines	709 West Roma Avenue, Albuquerque.
NEW YORK.		
Henry D. Sayer	State industrial commissioner	124 East Twenty-eighth Street, New York.
E. B. Patton	Chief statistician, State industrial commission.	Albany.
W. W. Jones	Mine inspector, State industrial commission	Do.
Robert W. Jones	Inspector of mines and tunnels, State industrial commission.	124 East Twenty-eighth Street, New York.
Gustav Werner	Tunnel inspector, State industrial commission.	Do.
NORTH CAROLINA.		
M. L. Shipman	Commissioner of labor and printing	Raleigh.
NORTH DAKOTA.		
W. H. Robinson	State engineer	Bismarck.
G. H. McMann	Assistant State engineer	Do.
John Hanwell	State mine inspector	P. O. box 271, Bismarck.

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State mine inspectors and other mine officials in the United States Jan. 1, 1921—Contd.

Name.	Designation.	Address.
OHIO.		
Percy Tetlow	Director, department of industrial relations	Columbus.
Wm. Robinett	Chief, division of mines	Do.
Miss Hazel Sims	Chief clerk, division of mines	Do.
Dan C. Jones	Deputy inspector, District No. 1	Coalton.
Jas. Dugan	Deputy inspector, District No. 2	Logan.
Andrew Ginnan	Deputy inspector, District No. 3	Jacksonville.
Elmer Sagle	Deputy inspector, District No. 4	Roseville.
E. W. Smith	Deputy inspector, District No. 5	Byesville.
Stephen Williams	Deputy inspector, District No. 6	Barnhill.
Geo. H. Foster	Deputy inspector, District No. 7	Massillon.
Lot H. Jenkins	Deputy inspector, District No. 8	Martins Ferry.
Frank P. Corey	Deputy inspector District No. 9	Flushing.
T. P. Williams	Deputy inspector, District No. 10	Belmont.
Andrew Mullen	Deputy inspector, District No. 11	Adena.
Thos. G. Reese	Deputy inspector, District No. 12	Salem.
Val E. Brown	Deputy inspector, District No. 13	Pomeroy.
Isaac Vaughn	Deputy inspector, District No. 14	Nelsonville.
J. F. Davis	Deputy inspector, District No. 15	Shawnee.
James Forgie	Deputy inspector, District No. 16	Lore City.
Edw. A. Evans	Deputy inspector, District No. 17	New Philadelphia.
P. W. Moore	Rescue car attendant	Columbus.
J. C. Wilson	Oil and gas well inspector	Do.
OKLAHOMA.		
Ed. Boyle	Chief mine inspector (mines, oil, and gas)	McAlester.
John O'Brien	Assistant mine inspector, District No. 1	Lehigh.
William Ogilvie	Assistant mine inspector, District No. 2	McAlester.
Miller D. Hay	Assistant mine inspector, District No. 3	East Broadway Apartments, Muskogee.
OREGON.		
J. W. Ferguson	Chairman State industrial accident commission.	Salem.
Henry M. Parks	Oregon bureau of mines and geology	417 Oregon Building, Portland.
PENNSYLVANIA.		
Seward E. Button	Chief, department of mines	Harrisburg.
Frank Hall	Deputy, department of mines	Do.
Edward C. Malick	Chief clerk, department of mines	Do.
Anthracite inspectors.		
Benjamin Maxey	Mine inspector, 1st district	Forest City.
P. J. Moore	Mine inspector, 2d district	Carbondale.
L. M. Evans	Mine inspector, 3d district	Scranton.
Jenkin T. Reese	Mine inspector, 4th district	Do.
S. J. Phillips	Mine inspector, 5th district	Do.
David T. Williams	Mine inspector, 6th district	Do.
Augustus McDade	Mine inspector, 7th district	263 North Main Street, Taylor.
Robert Johnson	Mine inspector, 8th district	Pittston.
Edwin C. Curtis	Mine inspector, 9th district	West Pittston.
John B. Corgan	Mine inspector, 10th district	Kingston.
T. J. Williams	Mine inspector, 11th district	Do.
D. T. Davis	Mine inspector, 12th district	Wilkes-Barre.
Frank Kettle	Mine inspector, 13th district	Do.
Joseph J. Walsh	Mine inspector, 14th district	Nanticoke.
David J. Roderick	Mine inspector, 15th district	Hazleton.
J. J. Stickler	Mine inspector, 16th district	Do.
Isaac M. Davies	Mine inspector, 17th district	Lansford.
E. G. Evans	Mine inspector, 18th district	Coaldale.
M. J. Brennan	Mine inspector, 19th district	Pottsville.
P. C. Fenton	Mine inspector, 20th district	Mahanoy City.
A. B. Lamb	Mine inspector, 21st district	Shenandoah.
William Reid	Mine inspector, 22d district	Centralia.
B. I. Evans	Mine inspector, 23d district	Mount Carmel.
P. J. Friel	Mine inspector, 24th district	Shamokin.
Charles J. Price	Mine inspector, 25th district	Lykens.
Bituminous inspectors.		
Alexander McCanch	Mine inspector, 1st district	Monongahela.
C. B. Ross	Mine inspector, 2d district	Latrobe.
	Mine inspector, 3d district	
William Langan	Mine inspector, 4th district	Dubois.
Richard Maize	Mine inspector, 5th district	Uniontown.
Thomas D. Williams	Mine inspector, 6th district	Johnstown.
Charles P. McGregor	Mine inspector, 7th district	Crafton.

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State mine inspectors and other officials in the United States Jan. 1, 1921—Continued.

Name.	Designation.	Address.
PENNSYLVANIA—contd.		
Bituminous inspectors—Continued.		
Joseph Knapper	Mine inspector, 8th district	Philippsburg.
Silas S. Hall	Mine inspector, 9th district	Connellsville.
Joseph Williams	Mine inspector, 10th district	Altoona.
J. J. McDonald	Mine inspector, 11th district	Greensburg.
T. J. Lewis	Mine inspector, 12th district	Punxsutawney.
J. I. Thomas	Mine inspector, 13th district	Johnstown.
David Young	Mine inspector, 14th district	Freeport.
W. B. Wardrop	Mine inspector, 15th district	Patton.
W. H. Howarth	Mine inspector, 16th district	Brownsville.
John I. Pratt	Mine inspector, 17th district	5494 Hays Street, Pittsburgh.
Thomas A. Mather	Mine inspector, 18th district	Tyrone.
James J. Stoker	Mine inspector, 19th district	Irwin.
F. W. Cunningham	Mine inspector, 20th district	Somerset.
C. P. Byrne	Mine inspector, 21st district	Charleroi.
John F. Bell	Mine inspector, 22d district	Dravosburg.
Edward E. Girod	Mine inspector, 23d district	Masontown.
Nicholas Evans	Mine inspector, 24th district	Johnstown.
Thomas S. Lowther	Mine inspector, 25th district	Indiana.
P. J. Callaghan	Mine inspector, 26th district	Bridgeville.
Harry Phythyon	Mine inspector, 27th district	Belle Vernon.
Thomas H. Thompson	Mine inspector, 28th district	Punxsutawney.
Patrick S. King	Mine inspector, 29th district	612 North Canal Street, Pittsburgh.
C. H. Croker	Mine inspector, 30th district	Johnstown.
SOUTH DAKOTA.		
Otto Ellerman	State mine inspector	Lead.
TENNESSEE.		
O. P. Pile	Chief mine inspector	Nashville.
W. H. Elliott	District mine inspector, eastern division	Rockwood.
A. J. Holden	District mine inspector, middle division	Dayton.
Geo. B. Thom	District mine inspector, western division	Palmer.
TEXAS.		
B. S. Gentry	State mine inspector	P. O. box 327, Rockdale.
UTAH.		
Preston A. Thatcher	Chairman industrial commission of Utah	State Capitol, Salt Lake City.
C. A. Allen	Mining engineer, United States Bureau of Mines, chief mine inspector for the industrial commission.	Do.
John Crawford	Coal mine inspector	Do.
H. G. Snyder	Metal mine inspector	Do.
VIRGINIA.		
John Hirschberg	Commissioner, bureau of labor and industrial statistics.	Richmond.
A. G. Lucas	State inspector of mines, bureau of labor and industrial statistics.	Do.
WASHINGTON.		
Abe Morris	State mine inspector	Perkins Building, Tacoma.
Geo. T. Wake	Deputy mine inspector	Do.
WEST VIRGINIA.		
R. M. Lambie	Chief, department of mines	Charleston.
S. E. Hawshaw	Mine inspector, District No. 1	Thomas.
W. H. Sandridge	Mine inspector, District No. 2	Grafton.
Evan L. Griffiths	Mine inspector, District No. 3	Clarksburg.
James Golden	Mine inspector, District No. 4	Morgantown.
W. B. Riggleman	Mine inspector, District No. 5	Fairmont.
M. B. Coulter	Mine inspector, District No. 6	Moundsville.
M. E. Quenon	Mine inspector, District No. 7	Weston.
V. E. Sullivan	Mine inspector, District No. 8	Charleston.
Eli J. Mason	Mine inspector, District No. 9	Do.
Zach Evans	Mine inspector, District No. 10	Handley.
John E. Hamilton	Mine inspector, District No. 11	Eskdale.
J. A. Porter	Mine inspector, District No. 12	Gauley Bridge.
Harry Fryer	Mine inspector, District No. 13	Prince.
Robert Lilly	Mine inspector, District No. 14	Mount Hope.

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State mine inspectors and other officials in the United States Jan. 1, 1921—Continued.

Name.	Designation.	Address.
WEST VIRGINIA—contd.		
A. P. Burdiss	Mine inspector, District No. 15	Beckley.
L. B. Holliday	Mine inspector, District No. 16	Mullens.
Thomas Stockdale	Mine inspector, District No. 17	Freeman.
W. D. Lee	Mine inspector, District No. 18	Maitland.
William Gantz	Mine inspector, District No. 19	Iaeger.
J. W. P. St. Clair	Mine inspector, District No. 20	Williamson.
J. F. White	Mine inspector, District No. 21	Logan.
Pete McLinden	Mine inspector, District No. 22	St. Albans.
.....	Director of mine-rescue stations	Charleston.
J. D. McCune	Inspector of sand mines, etc	Martinsburg.
WISCONSIN.		
R. McA. Keown	Engineer, industrial commission	Madison.
Arthur H. Findeisen	Mine inspector, industrial commission	Do.
WYOMING.		
R. T. Sneddon	Coal mine inspector, District No. 1	Diamondville.
R. V. Hotchkiss	Coal mine inspector, District No. 2	Sheridan.

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Bulletin 140. Occupational hazards at blast-furnace plants and accident prevention based on records of accidents at blast furnaces in Pennsylvania in 1915, by F. H. Wilcox. 1917. 155 pp. 16 pls.

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